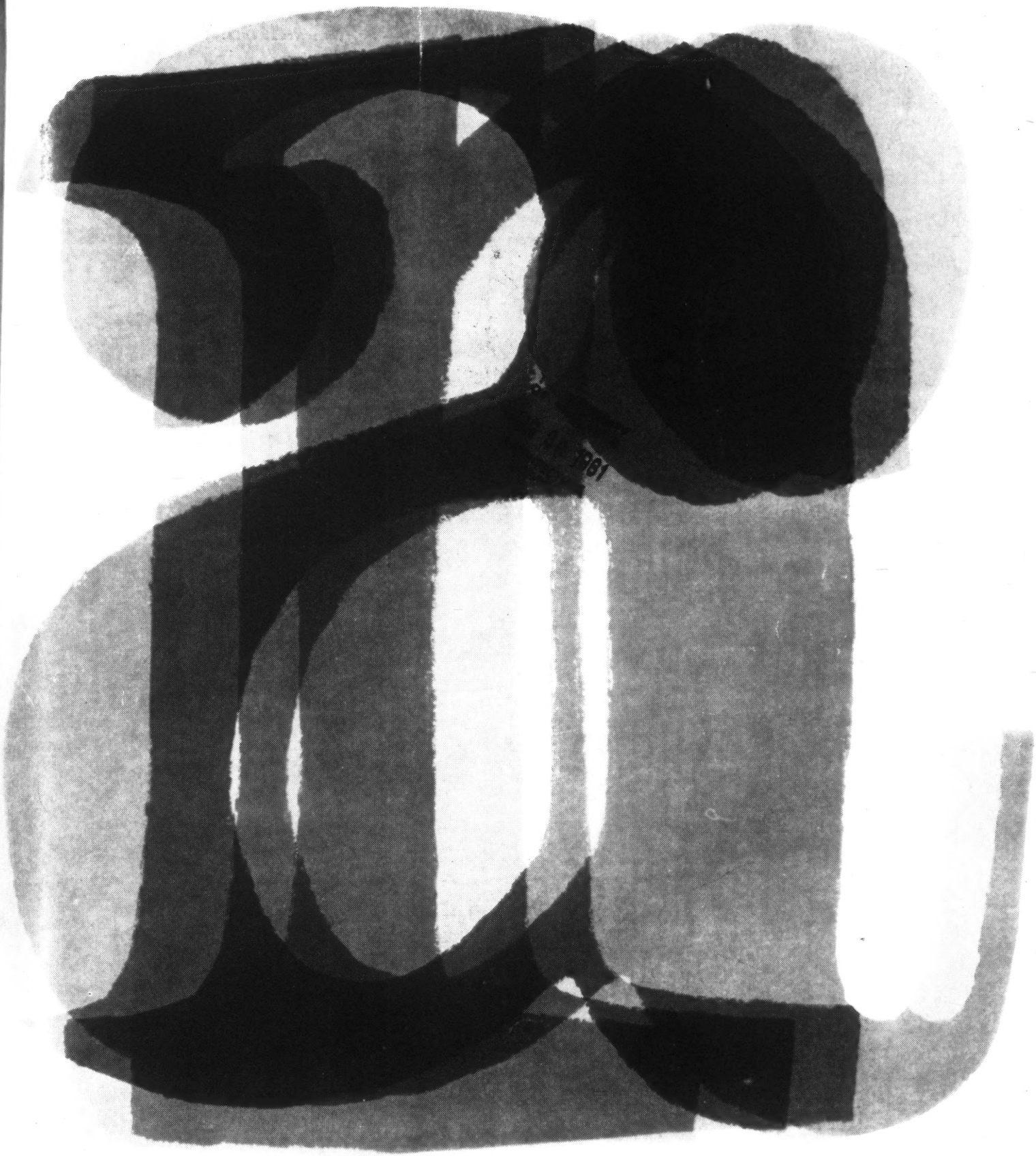

THE ARCHITECTURAL REVIEW VOLUME CXXX NUMBER 774 AUGUST 1961 FIVE SHILLINGS

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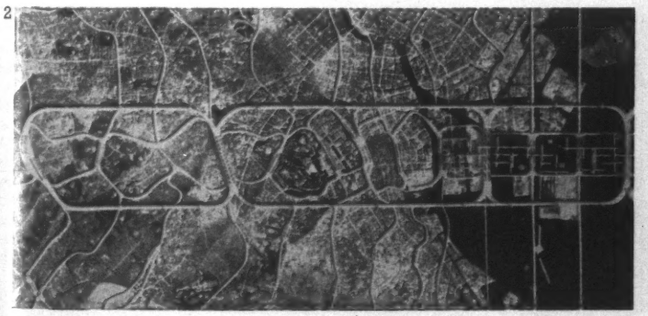
1

GREATER TOKYO

Those who have watched, over the last five years, the growing preoccupation of Japanese architects with hyper-utopian neo-futurist urban projects, and—at the same time—the simultaneous growth of authority and modishness in the trabeated concrete architecture of men like Tange and Maekawa, must have wondered with a degree of apprehension what would happen when the two trends collided.

Now that it has happened, in the Tange Research Group's 1960 plan for Tokyo, 1, it has the added terror, for conventional town-planners, of being a scheme for an existing town, as was Le Corbusier's *Plan Voisin de Paris*.

On the other hand, they will probably be relieved to see that the Group have achieved a blend of the traditional and the visionary as delicate as any middle-of-the-road planner could have wished—except that no middle-roader could have done it. The scheme starts by assuming that some sort of civic axis is the prerequisite of metropolitan order (as Costa did at Brasilia) but the axis here starts within the present area of the city, 2, and is realized as a linked chain



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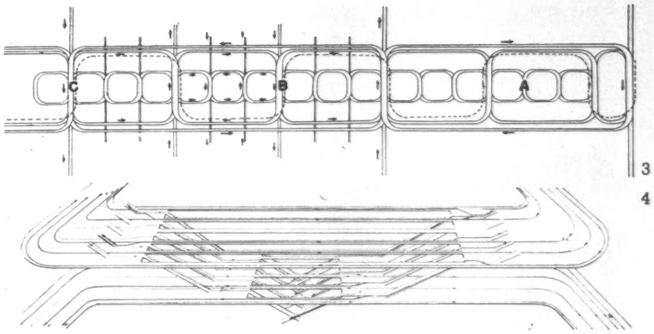

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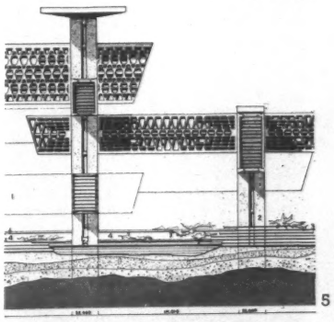

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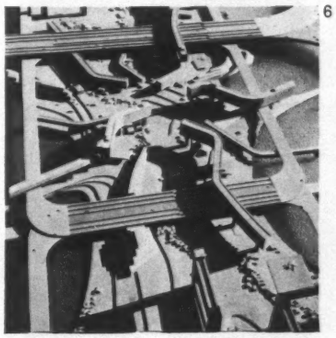

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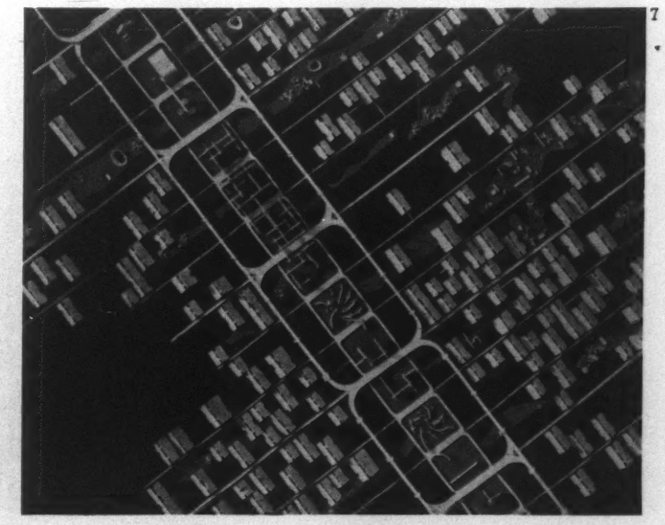
of loops of road. These links represent one of the neatest technical innovations in the scheme, since on each loop traffic circulates in only one direction, 3, with access to the next loop achieved by changing levels, 4, at the points of overlap.

Each main link of the chain is to enclose about one square kilometre of land, except that loop 3 and onwards will be out in Tokyo Bay, with the outward and return sections of the road carried on suspension bridges. This will doubtless be decried as ridiculous economically, but its social superiority to the sampanization of the Bay, Hong Kong style, should be clear enough, as should the psychological advantages of giving the city contact with its sea, from which it is at present largely isolated by shoreline factories.

The contents of the links are social and commercial functions, including a new central station in the third loop, and a new liner-harbour in the fourth. Elsewhere along the chain, the accommodation for offices, etc., is either in what appears to be a revived form of Lissitsky's *Wolken-bugel*, 5, with post-Kahn structure, or in free-form snake-blocks, 6, that bridge over roads with positively Brazilian insouciance. Once fairly launched out into the Bay, this vertebral core of transport and administration begins to send out side-shoots from which grow, in a manner that brings out everything that is fashionable in the term 'random distribution,' 7, a proliferation of residential blocks whose apparently traditional form is heavily qualified when their immense scale is appreciated; they may apparently be as much as twenty storeys high, with the added excitement that these storeys may be no more than concrete decks on which individuals may build individual houses to their own taste. On this scale, such



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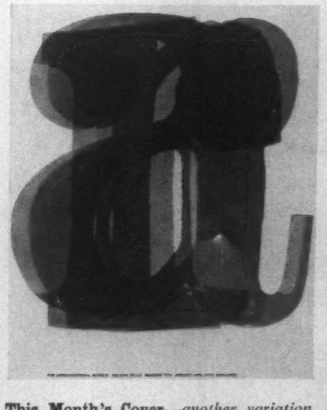

This Month's Cover—*another variation on the AR initials—is from a photogram by Geoffrey Gale.*

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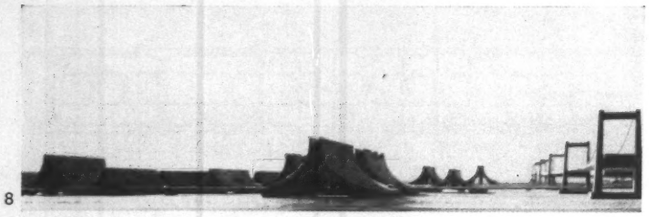

8

Tokyo

minor works will hardly register, and will be powerless to spoil the science-fictional townscape created by these gigantic tent-forms squatting low over the water, 9.

The whole project represents the most formidable assault made since the war on the technical and formal problems of a utopian city (for all that its projectors insist on the need to build it *now*, as was the case with the *Plan Voisin* also), being more radical in both its overall forms and in its handling of the traffic problem than either Brasilia on the one hand, or the Metrolinear project of Professor Malcolmson on the other. But what may either damn the scheme in spite of its technical and social virtues, or recommend it in spite of its economic improbabilities, is the incredibly fashionable nature of the forms in which (for doubtless impeccable functional reasons) it has been realized. Here is a scheme which should bewitch the eyes of a generation—who may count themselves fortunate that the very full presentation of it in *Japan Architect* (April, 1961) is supported by an equally full and fascinating text, admirably translated by C. S. Terry.

MELBOURNE ARTS

However its exact local nomenclature may vary, the Arts Centre is clearly a constituent building type of the era after World War II. It may be a house of Soviet Culture, or a museum of modern art, or a National Gallery and Cultural Centre—as in Roy Grounds's new project for Melbourne, 9—but the architectural problem remains one of reconciling art galleries with office-space and auditoria-theatres, with or without a garnish of teaching activities to encumber the architect's concept. The Grounds solution, evolved after a prolonged study-tour of analogous and related institutions all over the world, consists of a gallery block, with three internal courts, and flanked by a triangular art-school building, two auditoria and an experimental theatre below podium level, the head of the larger auditorium rising through the podium, capped by office-floors and a 415-foot spire, seen rising above the theatre concourse in 10, while 11 shows the entire scheme in relation to the surrounding Melbourne townscape.

More advanced drawings of the scheme will be awaited and studied with considerable interest, not only to see how the footings of the spire are threaded through the doubtless complex planning below, but also because of the proposed section of the galleries.

11

It is intended to hang the pictures on the inner face of the blank outer walls, which are to be flooded with light from top to bottom, but uninterrupted by floors in spite of their four-storey height. Instead, the pictures are to be viewed from 'floating' platforms suspended clear of the walls from a central core-structure.

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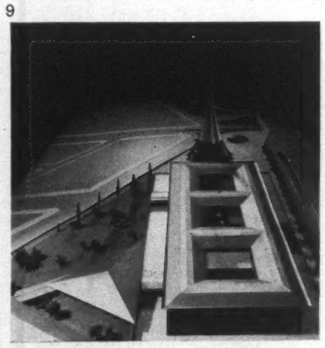

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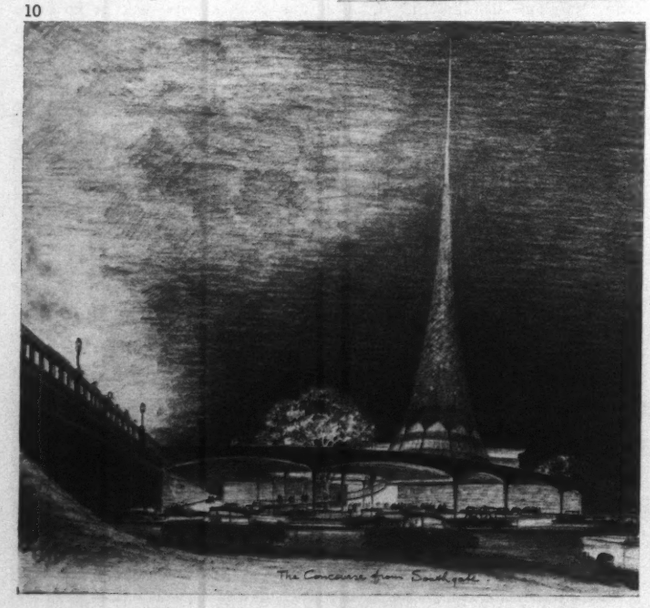

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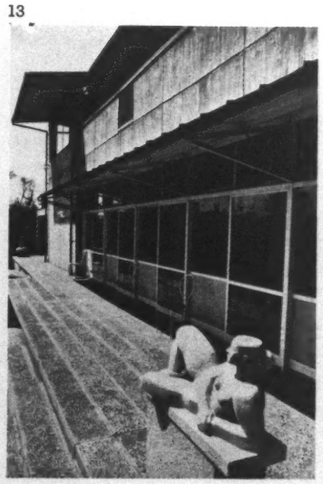
BUILDING DIPLOMATICALLY

recent embassy buildings in Asia

13

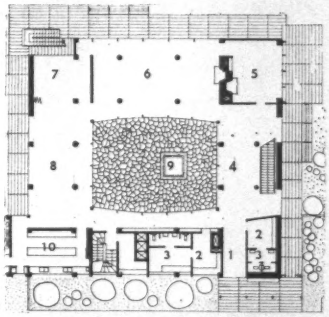


Controversies greet new US Embassies; other nations build theirs and escape undiscussed. This imbalance doubtless reflects a political situation, but it causes some remarkable architecture to go unnoticed, for overseas building operations are becoming an ever more important diplomatic activity for a number of nations, and their manner of presenting themselves to other countries reveals aspects both of diplomacy and architecture that might otherwise pass without comment.

The Swedes, it appears, like to fit in. Their new embassy in Tokyo, 13, designed by Nils Ahrbom and Kunio Maekawa, with Carl-Axel Acking assisting on the interiors, conducts itself in an Eastern-Western manner that does not differ at first sight from much other architecture being built in Japan at present—13 would be very difficult to place, even with the sculp-

ture by Erik Grate in the foreground. However, the courtyard plan, 14, and more particularly the plan of the courtyard, reveal a fundamentally Western and Formal attitude, which the interiors, 15, confirm.

But at New Delhi, there was nothing much to fit into—and *Arkitektur* (1, 1961) found this a remarkable enough situation to deserve comment. 'Round about lie embassy buildings from the whole world of the most varying type and appearance. There was therefore no particular environment or atmosphere to consider. Instead, the architectonic composition has . . . been based on climate, building technique and function. . . .' From these considerations, Joran Curman and Sune Lindstrom have made a mildly ceremonial, but mostly understated group of buildings, 16, based more or less on a 'compound' plan, 17, and an interesting section, based on the use of baffled and reflected



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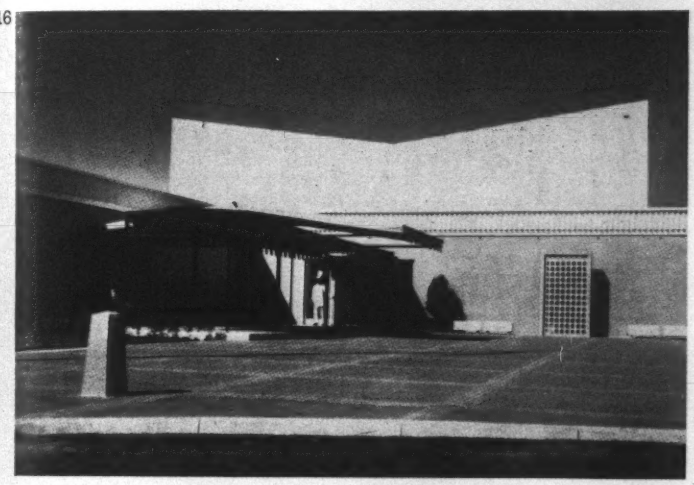
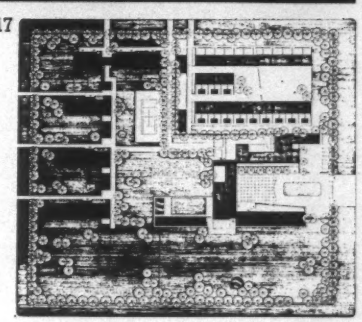

16

light, 18, for the roof of the main ceremonial rooms (banqueting, reception, dining, from left to right)—this, of course, is the roof that upstands behind the entrance in 16.

It would be difficult to find a more complete contrast to this Swedish approach than another Tokyo embassy, the Iranian, designed by Raymond and Rado, with Noemi Raymond for the interiors. Here, 19, monumental form is presented with elaborately patterned tile facings (as it might be Louis Kahn in gift-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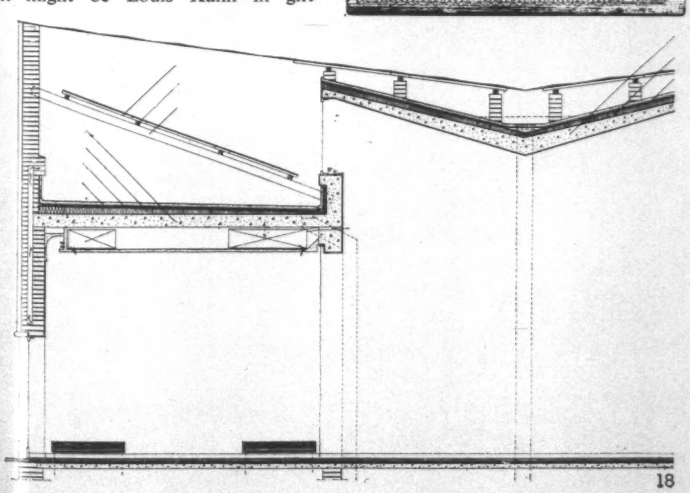
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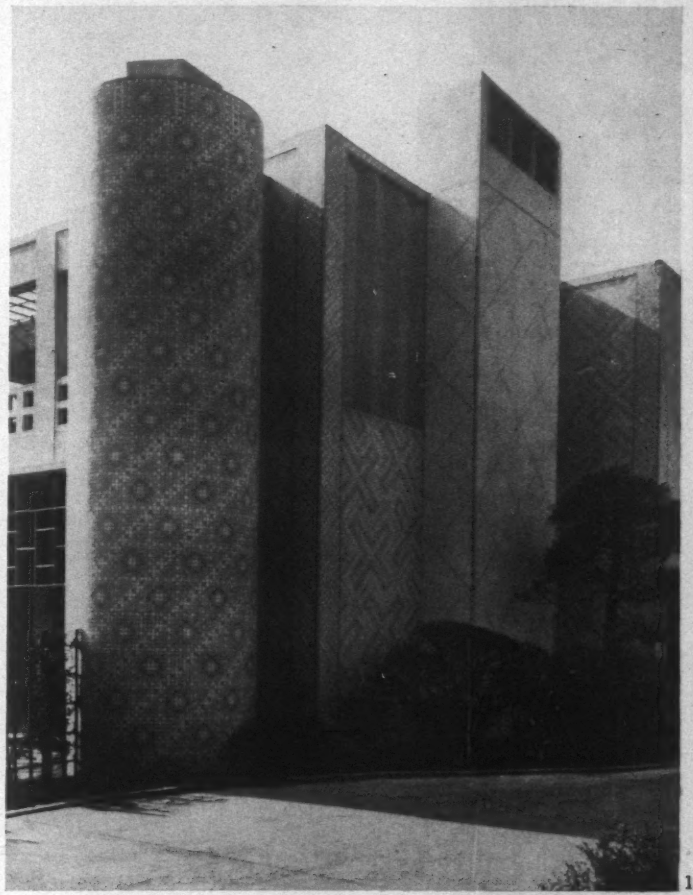
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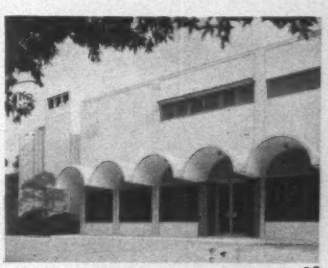
wrapping), the garden façade makes a strong pattern of balconies and sunscreens, and the interiors employ grille-work to aggressively oriental effect, 21. Yuichiro Kojiro, writing in *Japan Architect* (January, 1961), sees this building as a general extension of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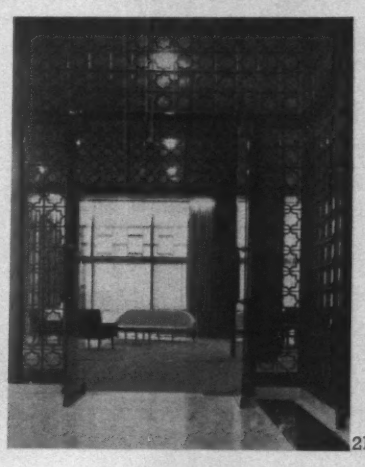
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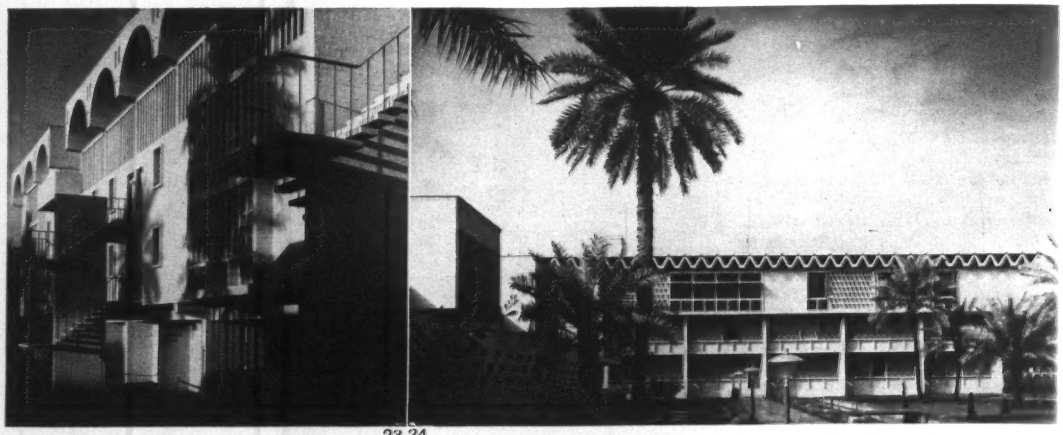
Raymond's earlier diplomatic architecture in Japan, but notes that the tiling and the shell vaults of the entrance side, 20, are new, denies that either is really as predominant as seems at first sight, feeling that both help to diminish the apparent scale of the building, while the tiling follows a basic decision to leave no concrete-work exposed—a bold move in Japan at the present juncture.

In striking contrast to all these works, J. L. Sert's recently-completed US Embassy buildings in Baghdad, such as the Residency, 22, make a very strong effect with their vaultwork.

22

embassies

In spite of rumours of change, the executed work follows closely the original project (AR, *Marginalia*, May, 1958), but has turned out more 'Musulman' than might have been expected, as in the busy and elaborate rear-façade of the staff apartments, 23, crowned with rather ponderous-seeming tunnel vaults (which, in fact, make interesting small rooms at the highest floor-level). The generally elaborate and insubstantial screenwork covers all main exteriors, including those of the Chancery, with its corrugated roof slab, 24, and are probably best seen—as might be expected—by night, when light filters out in a great variety of patterns.



23 24

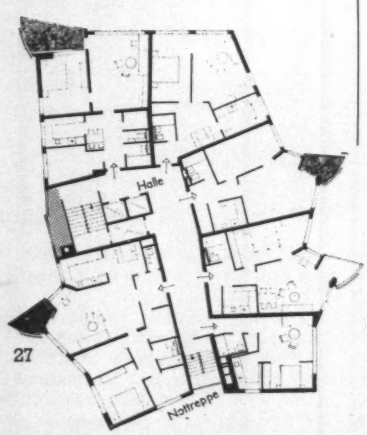
25

ROMEO UND JULIA

The harvest of the autumn years of Hans Scharoun's life looks like being more copious, as well as more rich in quality, than even his most fervent admirers have dared to hope. To his work in school architecture—fruit of the seed planted so long ago at the Darmstadt Congress—can be added the stunning *wohnpaar* that rejoice in the names of Romeo and Julia, 25, outside Stuttgart. Standing practically on the rim of what *Bauwelt* (21, 1961) inflating a favourite town-planners' cliché, calls the 'boiling pot' of the *schwabische Metropole*, the two blocks differ radically in form, 26, as the air-view shows, without ceasing to be Scharoun at his most typical. Romeo, for all his irregularities, is snug and compact in plan, 27, while Julia, opening in a generous curve, must be one of the most extravert, 28, feminine buildings ever erected.

Both blocks individually, and the scheme *in toto*, abound in felicities. In 26, for instance, it will be seen how Romeo, in spite of the suburban location of the site, stands hard up against the pavement, thus making an unmistakable landmark on *Bundesstrasse 27* and creating that emphatic sense of place that has been the aim of so many architects since they (if not Scharoun) first read Kevin Lynch on 'cluster' and urban 'grain.' Again, both blocks offer studio accommodation, 29, to lucky tenants amid a roofscape of views and sheltered terraces, 30, that would justly be termed fabulous and call down sensational rentals were it on top of an hotel. The usual worries will doubtless be expressed about the difficulty of furnishing these 'irrational' plans, but the informality of the shapes only becomes extreme in the balconies, and most of the interiors, 31, do not go far beyond current German norms—except in being spatially far more interesting.

26



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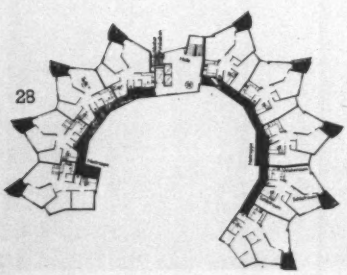

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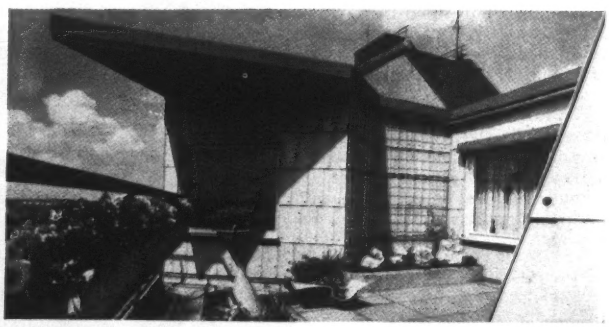

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views and reviews

MARGINALIA

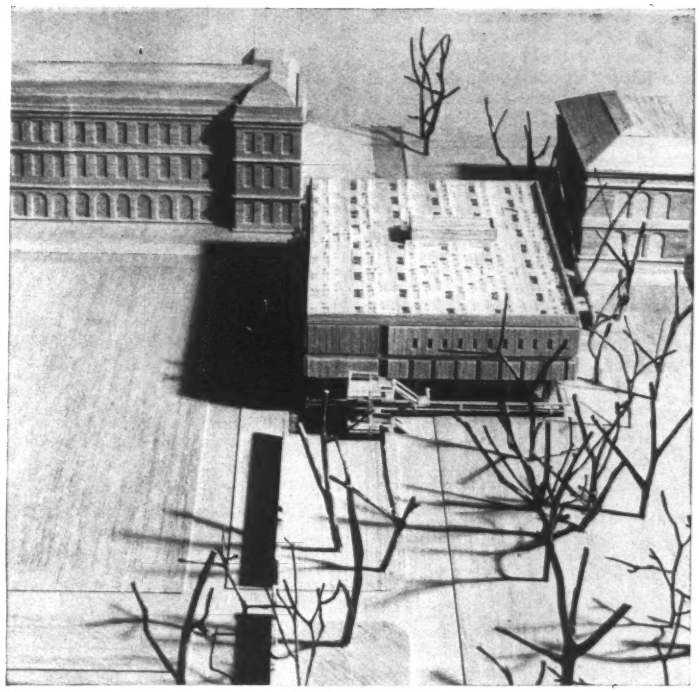
TRINITY COLLEGE LIBRARY COMPETITION

The outcome of the competition for the design of a library extension at Trinity College, Dublin, has been received with justifiable satisfaction. The entry was truly international—*global* might be a better word—the awards proved to have been equally international in distribution, and the winner, Paul Koralek (a British architect—product of the AA—of Austrian origin) is exactly the kind of person everybody likes to see as the winner of such a competition, a young architect just embarking on independent practice. The second prize went to Israel, the third to the USA; Highly Commendeds to Britain and the USA; commendations to entries from Britain, Portugal and Turkey.

Koralek's design, 1, is (as the Jury point out in a commendably full report) 'consciously modern in style and construction,' but, to quote the jury once more 'The architectural relationship with the older buildings is good. Main cornice and string-course levels have been well considered. The facade exhibits a sensitive progress of windows which is carefully proportioned, and both less affected and more logical than might appear at first sight.' The jury's doubts about the closeness of the new block to the old work seem justified, though 2 tends to exaggerate it. Nevertheless, it shows that the architect is prepared to stake a great deal on a close confrontation of new and old, and it is therefore a significant sign of the times that, on an occasion when it is—at last—considered proper to make such a confrontation in a British University, the Italian member of the jury, Franco Albini, should dissent, and in a minority report, state that the architecture, 'though of a high standard, does not seem to me to harmonize with the surroundings in which the new building is to be situated.' Further remarks make it clear that he does not mean simple stylistic keeping in keeping, but his expressed preference for one of the Highly Commendeds, 3, by H. J. Nicolais, which appears directly hostile to the *ambiente preesistente*, makes one wonder just *what* he means.

YORK COURSES

More detailed prospectuses have now been issued of early autumn short courses at the Institute of Advanced Architectural Studies, York, dealing with factory-design, new timber techniques and waterside buildings. The last, which touches a subject that has long occupied the attention of the AR, promises to be a useful and necessary innovation, and while its lecturers include a proportion of engineers, the architectural and landscape side is strongly represented by such names as Sylvia Crowe, Peter Shepheard, J. A. Wells-Thorpe, William Allen and G. A. Jellicoe. We wish the Institute particular success with this venture, which opens up a field where serious research and teaching are needed—as witness such waterway restoration projects as that for the Stratford-on-Avon canal mentioned below. Enrolment for this course is open until September 8, and all details may be had from the Secretary of the Institute, Micklegate, York.



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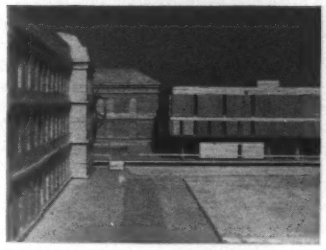

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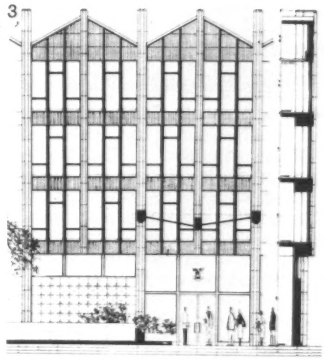

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1 and 2, Paul Koralek's winning design in the Trinity College library competition. 3, highly commended design by H. J. Nicolais.

THE STRATFORD CANAL

The story of the Stratford Canal has at last reached the first stage towards a happy ending. The canal, begun in 1793 and completed 23 years later, runs for 12 miles from its junction with the Worcester and Birmingham Canal at King's Norton to Kingswood Junction, where it is linked with the old Warwick and Birmingham Canal, now part of the Grand Union. From there it runs for 13 miles to Stratford where, forming a landscape feature in the public green in front of the Shakespeare Memorial Theatre, it joins the River Avon. This latter half, meandering through the remote and lovely Arden countryside, carried 100,000 tons a year in the flourishing heydays of the Canal Era, but for the past 15 years it has lain derelict and impassable, its towpath blocked with a riot of weeds—thanks to the progressive sabotage of many decades by the railers who came to own it, and of the more recent apathy of bureaucracy.

4, the rare type of guillotine lock at King's Norton at the northern end of the Stratford Canal where it forms the Worcester and Birmingham—a fine piece of decorative, mobile sculpture in cast iron.

A great opportunity to revive the canal together with the whole waterway network of the country came with the nationalization of transport in 1947, but nothing much happened then and not enough has happened since. Indeed, an application for the legal abandonment of the Stratford was made in 1958. This caused a loud and unexpected public outcry. 6,000 individual objections were received by the authorities within a few weeks and the Inland Waterways Association held a crowded protest meeting at the Stratford Town Hall. There the proposal was made that, if it did not want the canal, the British Transport Commission should hand it over for safe-keeping to the National Trust.

Unexpectedly, by means of a Private Act of Parliament, that happened. Moreover, as the *IWA Bulletin* puts it, through 'a considerable feat—and one which has, in fact, exacted much skill, diplomacy, effort and persistence,' the Ministry of Transport was finally persuaded to contribute up to £20,000 towards reconstructing the canal, its condition being that at least the additional minimum of £22,000 needed

should be raised from other sources. That was less magnanimous than it sounds because official abandonment would have cost the country £120,000 according to the Transport Commission's own estimate.

A miracle occurred. The IWA obtained promises of £8,000 at dinners held in London and Chester, the Pilgrim Trust gave £10,000 and another £1,000 or so has since been raised in smaller gifts, with the result that the Minister of Transport has now made a definite promise that the Government subsidy will be paid. For the next five years the canal will be leased to the National Trust and if, during that time, it can be restored to full working order the Trust will have an option of acquiring the freehold for nothing. Stratford will have re-established its old water-link with London and indeed—since the canal lies at the hub of the waterway system of the country—with many other towns, especially in the Black Country. Revenue will be raised from tolls on pleasure and tourist boats navigating the waterway and from rents of moorings for houseboats.

In its recent News-Letter, the National Trust pointed out that it has here embarked on an important new venture because, for the first time, 'we are not merely preserving, we are actively creating a new source of pleasure and tranquillity.' The canal, it says, offers the chance 'for ordinary people to take an active part in a great work and to leave their own mark on the map of England; a chance to give pleasure (a neglected commodity) on countless idle summer afternoons to generations of boaters, fishermen, walkers, bird watchers and other civilized idlers.'

There is still work to be done. Reconstruction is being carried on by voluntary labour under the direction of Mr. David Hutchings, an architect. The Territorial Army has sent engineers to help by way of exercises, several firms have given free advice and equipment and the Youth Hostels Association has offered to house volunteers. But more direct physical help is needed and funds too. Those who contribute generously can secure immortality by having a lock named after them. (Volunteers can contact Mr. Hutchings at Junction Cottage, Lapworth, Solihull).

Eric de Maré

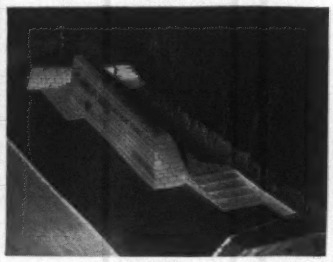
NEW ROYAL DESIGNERS FOR INDUSTRY

Stefan Buzas, architect and exhibitions and interior designer, Jack Howe, architect and industrial designer and design consultant to the British Transport Commission, and Marcello Nizzoli, the Olivetti typewriter and calculating machine designer, have been appointed to the Distinction of Royal Designer for Industry by the Royal Society of Arts.

OBITUARY

MARIO LABÒ

This past February, Mario Labò died in Genoa. He was in his seventy-sixth year, and no longer busy. But his influence was great all the same. When he was younger he had been prominent both as an architect and as a scholar. His papers on Baroque painters and Baroque architects in Genoa, published mostly in the 1920's, are still indispensable. Also, somewhat later, he turned as an architect from traditional to modern design, and his San Pietro Restaurant of 1936 is one of the earliest examples of the twentieth century style in his part of Italy. But his reputation among colleagues in the fields in which he worked went far beyond what he actually did. This was due to the great integrity of his character. He was a man without enemies, gentle, wise in counsel, helpful to the young, and rigorous in his standards. In the end, indeed, since the war, he was Papà Labò to a surprising number and variety of people. The papà applied to him, had, in fact, a connotation of tragedy as well as endearment. For Giorgio Labò, his only child, was tortured and shot by the Nazis for having worked in the underground movement and refused to betray others. It was in honour to him as an architect, but also as his son's father, that Mario Labò was commissioned to design the monument to the Italians who perished at Mauthausen concentration camp. This monument was illustrated in THE ARCHITECTURAL REVIEW in February, 1959. Mario Labò was a Commander of the Italian Republic, and President of the Accademia Ligustica. He visited England more than once, the last time for the General Assembly of Art Critics in 1955 at Oxford.



5, monument by Mario Labò to Italians who died at Mauthausen concentration camp.

Nikolaus Pevsner

CORRESPONDENCE

RAILWAY ARCHITECTURE

To the Editors.

SIRS,—The article 'Railways and Regions' in your May issue contains a stimulating mixture of criticism and praise and will have been read with great interest by architects in the railway service. It does, however, paint a more gloomy picture of the political and organizational background than is justified by reality and, for this reason, might frighten off possible applicants for vacancies in the various architectural offices concerned.

While there may be some uncertainty as to the shape of the future set-up, there is no doubt at all that a large number of keen and able architects will be needed and will find much scope in work of absorbing interest, both in the centre (whatever its future designation) and in the Regions.

Whatever evils may have come from an excess of admiration among Italian architects for Art Nouveau, the trend has some unexpected successes to its credit in the way of sympathetic treatment of unwanted monuments of that period. The most spectacular example of this is the re-erection of a large part of the façade of Cattaneo and Santamaria's Albergo Corso *in Milan, as part of the exterior skin of a new office block for an insurance company, 6, designed by Pasquali and Galimberti. 1960 has paid its respects to 1905 not by merely conserving the old in quotation marks, or by deliberate incongruous embedding in the new (as in some German examples), but by varying the bay widths and structure of the new work in order to incorporate the old organically into the new.*

It also needs mentioning that the relationship between engineers and architects in the railways is far more co-operative than the uninitiated reader of your article would be made to think—as is evident from the work you illustrate.

Yours, etc.,
F. F. CURTIS,
(Architect, British Transport Commission).
London, N.W.1.

BOOK REVIEWS

FOUNDING FATHER

LOUIS SULLIVAN AS HE LIVED: THE SHAPING OF AMERICAN ARCHITECTURE. *By Willard Connely. Horizon Press Inc. New York.* 1960. $6.50.

The records of the life of Louis Sullivan are much too scanty and insignificant to make a respectable biography. To make up for the want of information Mr. Connely relies on some old devices. 'Many a night did Louis go rollicking round Montparnasse with his friends Millet and Healy.' 'Louis tarried in Rome hardly longer than a week.' 'It was as if all the musical talent of Patrick Sullivan and Adrienne List, which might have begotten a composer, had in their son inclined his prehensile fingers to pencil and triangle instead of to sharps and flats . . .' To the common practices of popular biography Mr. Connely has added an irritating one of his own, an abundant use of quotation marks; it is impossible to detect when he is quoting or when he is inserting them for reasons known only to himself. The depth of his scholarship, and after all he is domiciled in England, may easily be illustrated. 'Long afterward, a British architect, John Summerson, who was also curator of Soane's Museum, had this to say of the *Autobiography* . . .' Alas, poor Summerson! First made British, then deknighted, and finally posthumated!

Sullivan's professional career had some resemblances with that of C. R. Mackintosh. He did his great work largely in conjunction with Dankmar Adler in the last fifteen years of the century and lived on until 1924, an almost jobless and pathetic wreck, long since overtaken by his assistant, Frank Lloyd Wright, in fame and influence. That a man of such remarkable abilities should have had such miserable fortune is tragic, but what the causes of the collapse were is in doubt. The separation from Adler was obviously the beginning. The success of classic at the Chicago Exposition did not help, but it could hardly have been as disastrous to a versatile architect as has been suggested. There is evidence that Sullivan was difficult with clients and put away more alcohol than was good for him. These separate facts hardly provide a suffi-

cient reason for such a professional disaster. Obviously there is not enough on record for a reasonable account of his life. This is implicitly recognized by Mr. Connely when he elaborates on Sullivan's early athletic activities. What possessed him to select such an unlikely subject? Stanford White would have served much better. At least a grand last chapter would have been assured.

There seem to have been at least three aspects of Sullivan's work; that partly derived from Richardson, the eccentric and very personal decorative schemes, and his ingenious solutions to the problems set by the requirements of tall commercial buildings. It is the last that has given him the reputation of one of the Founding Fathers of the Modern Movement. The demands were made by real estate speculators and were met by the Chicago architects and engineers with great ingenuity and freedom of mind. Why Sullivan should have thought the results the architecture of democracy is inexplicable. On the face of it the architecture of capitalism would have seemed a more appropriate designation, unless the dime store is equated with democratic institutions. That Sullivan's solutions of special problems, problems that have occurred more regularly in our own century, were conspicuously successful should not be taken as it so persistently is as a licence for denigrating the work of such an accomplished firm as McKim, Mead and White, whose problems were quite different. Had Sullivan been asked to design a club he would doubtlessly have gone eccentrically Romanesque and not all 'modern.' His prominence in Dr. Pevsner's Modern Movement (an entity one has some difficulty in accepting) is as much the result of what he did not have the opportunity of designing as what he did design, and as much the result of land speculators in every large town the world over being forced to do in this century what those of Chicago did in the last —go up. Sullivan went up very well and for that reason has an important place in architectural history. As a subject for a biography, leaving hardly a letter, hardly an anecdote, precious little detail, he has no place at all.

Peter Ferriday

DISPLAY EXAMPLES

ESEMPI: ESPOSIZIONI ARCHITETTURA ALLESTIMENTI. *By Roberto Aloi. Ulrico Hoepli, Milan.* 8,000 *Lire.*

Perhaps criticism of this book should be partially disarmed by the fact that it starts off so modestly by describing its contents as 'examples' of exhibition architecture and display, which all in all is a fairly frank label for a miscellaneous collection of photographs. However, it is both expensive and elegant, and as one of a series of nineteen in which Mr. Aloi sets out to present 'international examples of interior decoration, architecture and design' it has an unnecessary pretentiousness which draws fire.

The photographs themselves are good, well arranged and simply described in Italian and English. Unfortunately there is nothing to alleviate the impression that they have been selected at random from the author's extensive but parochial collection. Over half the examples are Italian. It is interesting to see the work of Italian designers in this field, particularly the vital and original examples from A. and P. G. Castiglioni, but British designers may feel poorly represented by two views of the Festival of Britain, the British Pavilion at Brussels and a couple of unremarkable trade stands. There are no chapters or definite sections to the book. Apart from an historical introduction, one can only dimly discern vague groupings of large exhibition buildings, small trade stands, some murals and decorative features and three or four display units. This lack of any apparent scheme of arrangement is further confused by the failure to translate the names of the exhibitions, so that we are left to struggle alone with 'Il Cinquantanove dal Convegno di Plombières all'Armistizio di Villafranca.' Agnoldomenico Pica's introduction, in spite of bizarre translation which produces sentences like 'Functionalism and new plasticity knocked at the door,' hints at some controversial questions (such as the role of propaganda exhibitions and the subordination of exhibits to the total effect) which could do with expansion and pertinent illustration and do not get it. A pity: this book could so easily have been something more stimulating than the pricey designer's crib that it is.

Caroline Heller

HIDDEN BEAUTY

NEW JAPANESE ARCHITECTURE. *By Udo Kultermann. The Architectural Press.* 63*s.*

How does one account for the particular interest of Japan today for western architects? What other country has been recently so honoured with a reconstruction, in the heart of Manhattan, of one of its sixteenth-century residences? Is the more-than-normal professional curiosity due perhaps to a feeling that the Japanese long ago anticipated forms that we now sense as an ideal, and that fresh new post-war forms are growing out of their rich tradition, under the warm sun of an advanced technology? Or does it come from a feeling that the Japanese, with their subjective genius for the natural form and long history of the successful adaptation of foreign influences, can perhaps show us the way to a more sensitive use of today's material opportunities in building?

Whatever the reason, there is the interest and an image. The latter, unfortunately (or appropriately enough in this age of general urban blight and singular architectural salvation) is mostly sustained through the medium of architectural photography: the art of taking things out of context. There *are* Japanese villages and pockets in Japanese cities where a man might not be ashamed of his condition, and indeed, feel that he is on the side of the angels. And there *are* an increasing number of brave new buildings, gentle in references to the older traditions, unashamed in foreign borrowings, or self-confident in a new concrete strength. But let it also be said that there is another tradition in Japan: that beauty must be well hidden; and that responsibility to the general public is a strange new idea. Thus there are acres of ugliness and pathetic squalor—and Japan today is economically one of the most privileged countries of the world, with an industrial growth rate in excess of ten per cent.

As to the conventional traditional image, we are rather well served by the press, both popular and professional. The contemporary work is another matter, however, and aside from Koike and Hamaguchi's *Japan's New Architecture* of 1956, and the Japanese architectural monthly which recently started an international English edition, there has not been much published of a comprehensive nature on the 'whole' picture of Japanese post-war building. This Dr. Kultermann avowedly attempts to remedy. He succeeds in partially correcting the image but fails in graphically documenting it.

He succeeds in the thirty pages of typographically decorous text, under the three headings of 'Fundamentals,' 'Problems and Solutions,' and 'Architects.' In the first, while admitting the influence today of a contemplative passivity due to an enforced acceptance of nature and a feudal social system, he also includes the ferment due to the impact of new social horizons and technological developments. The exclusive influence of Zen is discounted. The polymorphic nature of the Japanese attitude is emphasized; after all, contemporary with the Katsura no Rikyû is the Yômeimon at Nikkô; however inconvenient this fact is to certain idealized characterizations. On the subject of the Japanese passion for copying he reminds us that, traditionally, originality was not considered a virtue, and that the manner of execution was given greater value.

Under the heading 'Problems and Solutions' he writes briefly of the urban situation, and we are then given an exhaustive review of buildings: valuable in its completeness, but annoying in its provocative references to so many unillustrated examples. Regrettably lacking, in view of their seminal importance to architectural thought, are many illustrations of unrealized projects and future proposals, especially some of the imaginative (to say the least) remedies for the relief of Tokyo's growing chaos.

The landscape of contemporary Japanese architects is as mountainous as their country. There is the older, weathered, Suki-ya range, where the major peaks are the Murano, Horiguchi, Yoshida and Taniguchi. In the Corbu massif are the Maekawa, the Yoshizaka and the Sakakura, with the young volcano Otaka. In an independent group are the Fujiyama of Tange, the Ashihara and Yoshimura peaks whose foothills lie in the USA, the smiling Seike, and the sharp young Kurokawa cluster. Dr. Kultermann includes most of these in his final two dozen biographies, and this does much to remove the facelessness of architecture seen from another country and culture and to present some of the human factors behind the work. But of these twenty-four men, only eleven have their work shown in the following 180 pages of illustrations (the work of eight others is included, however) and almost one-third of all these photographs represent the work of one man. Of the fifty-odd buildings shown, half lack the essential accompanying plans. In view of all this it is difficult to justify the inclusion of a number of photographs showing relatively unimportant details (for example, one of a distant blank brick wall with the silhouette of a plane tree). One hopes that Dr. Kultermann will do another book in a few years, to include more of the work of the post-war generation: and that he will this time have more success with the documentation of the essence of architecture: the three-way interrelationship of the spaces of the environment, the exterior and the interior.

Philip Thiel

SHORTER NOTICES

THE THATCHER'S CRAFT. *Rural Industries Bureau.* 42*s.*

Most books about thatch and thatching are sentimental and nostalgic and treat it as a dying craft. The starting-point of this one is the opposite: the continuing demand for thatched roofs. It is essentially a practical book: a guide to thatching technique. It takes in turn the three main thatching materials: long straw, combed wheat-reed (also known as Devon reed) and Norfolk reed, and depicts the whole process of thatching a roof with each by means of a beautifully taken sequence of close-up photographs—over 200 photographs each in the case of combed-wheat and Norfolk reed.

There are also useful brief appendices on roof-construction, spar-making, thatching tools, fire protection and costing. The only regrettable omission is something about vermin, since the fear that thatched roofs may harbour vermin probably does more than anything to discourage house-owners from choosing this, in many ways excellent, form of roof-covering. Nevertheless the book is greatly to be welcomed and does the Rural Industries Bureau much credit.

EUROPEAN ARCHITECTURE IN COLOUR. *By R. Furneaux Jordan. Thames and Hudson.* 84*s.*

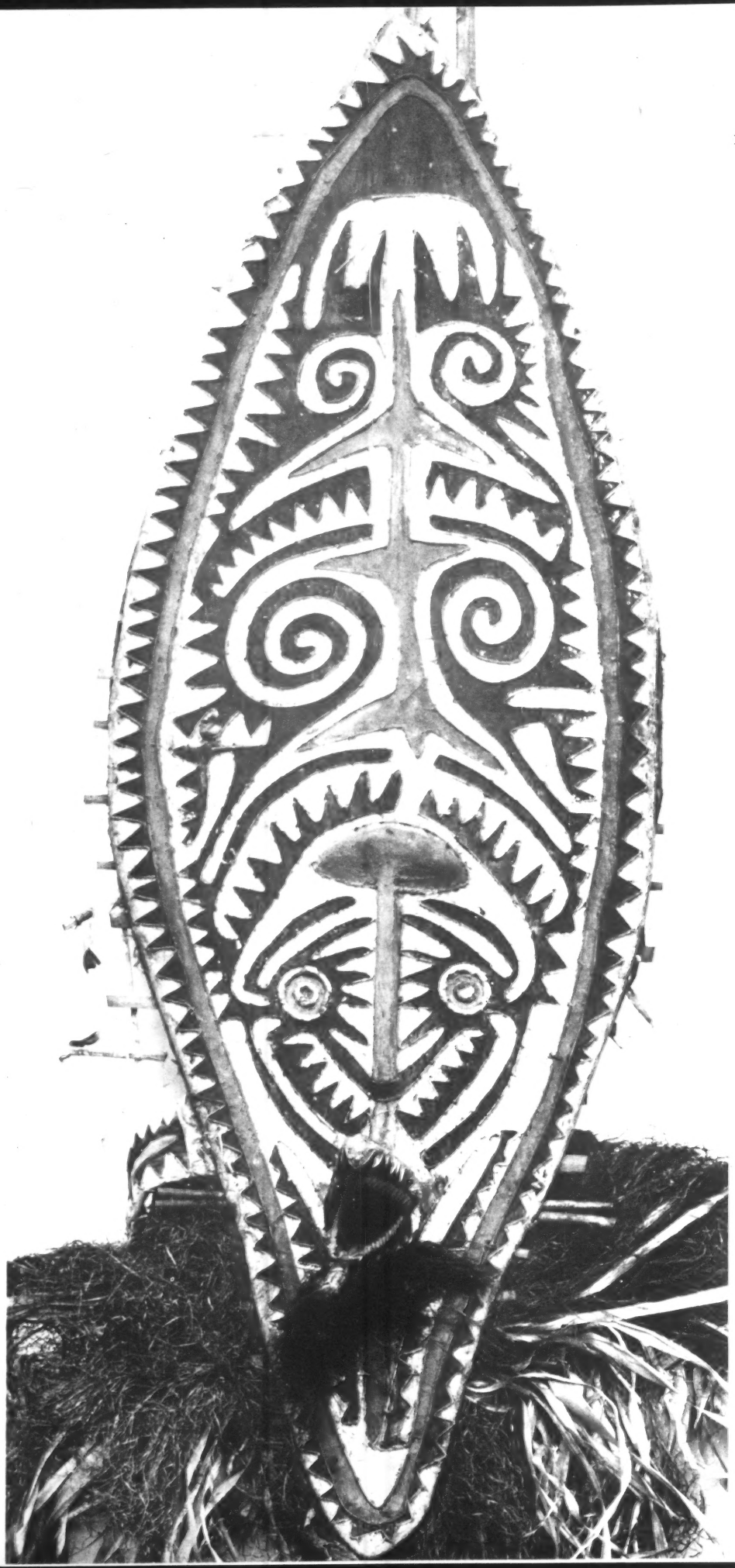
This is a drawing-room table volume, of great weight and bulk, the justification for which—since it contains nothing that cannot be found in the established architectural histories—is presumably that its 112 full-page photographs are reproduced in colour. Their quality is variable, but mostly good.

The arrangement is extremely irritating. The text referring to any given plate is several pages removed from it, and the title facing each plate refers to the preceding plate. Moreover Mr. Jordan's running commentary gets completely out of step with the captions to the plates though printed on the same page. The commentary is well written but clearly designed for the general reader; the captions (by Dr. Bodo Cichy) demand some degree of art-historical knowledge and are not well translated.

J. M. R.

BOOKS RECEIVED

SUFFOLK. *A Shell Guide by Norman Scarfe. Faber & Faber.* 12*s.* 6*d.*
PROCEEDINGS OF THE INTERNATIONAL CLEAN AIR CONFERENCE. *Published by National Society for Clean Air, Great Britain.* 32*s.* 6*d.*
HOUSES. *By Margaret and Alexander Potter. John Murray.* 15*s.*



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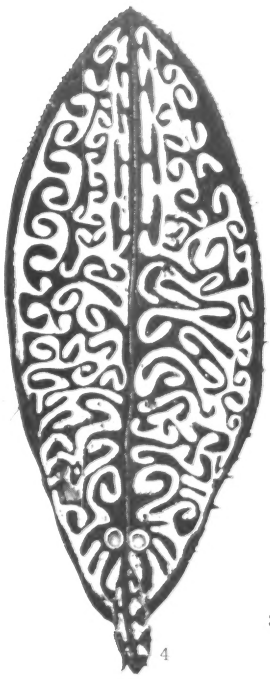

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Whatever objections may be raised against a purely formal appreciation of primitive art—and Robert Melville raises them in the article below—the formal elegance of much primitive work is striking. The objects from the Papuan Gulf illustrated opposite are: 1, *a hevehe mask from Orokolo;* 2, *an Era River figure;* 3, *a head ornament of the Gogodara tribe;* 4, *an aiaimunu mask from the inland branch of the Namua people, while* 5, *right, is an agiba for the display of skulls. All are reproduced in Mr. Douglas Newton's* Art Styles of the Papuan Gulf, *referred to below. Readers may like to speculate on the resemblance of some of these elegant patterns to the wall decorations illustrated on pages* 91–98.

5

Robert Melville

THE PROGRESS OF MAGIC

When Roger Fry reviewed an exhibition of negro sculpture just over forty years ago, he tried to convey the impression that he was making a purely aesthetic response to 'pure plastic design,' and there is no denying that he hit on some cool, clean words suitable for use at a purification ceremony. At a later date, his disciple Clive Bell reduced them to a simple magic formula by coining the term 'significant form,' and it enabled a great many respectable people to examine the cone-like breasts, cylindrical penises and other emphatic protuberances of negro sculpture without embarrassment.

In these circumstances, it was unkind of Fry to argue that the British produced bad sculpture because of their 'preference for certain forms which appeared to mark the nobility of man,' blaming in particular their attachment to long legs, and that the negro's greatness was due in part to his 'willingness to reduce the limbs to a succession of ovoid masses sometimes scarcely longer than they are broad.' It's not clear whether he was questioning the validity of our symbols or implying that nobility was not suitable for sculptural treatment, for he was careful to refrain from telling us what qualities the form preferences of the negro carvers might be supposed to symbolize. Nevertheless, there were times when he overstepped the white line of pure aesthetics. There's excitement of another kind in the relish with which he spoke of 'certain nameless savages' and 'the Congolese's ignorance and savagery,' and he accompanied the suggestion that 'if the negro artist wanted to make people believe in the potency of his idols he certainly set about it in the right way' with the admission that one was compelled to 'prostrate oneself before his "sticks and stones".' These remarks were of course accepted by his readers as the playful rhetoric of a scholar and connoisseur, but in the forty years or so of exposure to the arts of primitive peoples since the essay was written we have become less civilized, though possibly more sophisticated, and certainly dubious of anyone's pretensions to disinterested connoisseurship.

These effects of our long exposure to the primitive are exemplified in the admirable

catalogue of an exhibition of 'The Arts of the Papuan Gulf' recently held at the Museum of Primitive Art in New York, and I think the only people who might be disappointed are those artists—there can't be many of them left—who still rake through exotic art books for design suggestions. Every mark a tribe could ever call its own has long since been ground into the mash of the international styles.

The catalogue has been written and compiled by Mr. Douglas Newton, the curator of the Museum, and like those of the Museum of Modern Art has been issued as a well-designed book* between hard covers. It is the result of a lot of research and some hard thinking, and incorporates a great deal of fascinating anthropological material without invoking the ethical conventions of the West except in an occasional phrase like 'legitimized rape.' The cultures of the Papuan Gulf in southern New Guinea are beginning to disintegrate under the effects of Australian protection, partly because the elaborate ritual life of the tribes was inextricably involved in head hunting and cannibalism.

As in the art of most primitive peoples, their art objects are endless variations on a few basic forms and devices, and if the illustrations in the book had been confined to photographs of separate exhibits the results might have been monotonous. But some of the most effective photographs are of masks and painted boards hanging in great clusters in the dark entrances of the long houses, and these, together with descriptions of their ceremonial use, taken from eye-witness accounts of rituals, make it evident that some of their potency depended on quantity and that they were sometimes massed in a way that turned them into a phantom host or a tribe within the tribe. The effect of a typical painted oval mask—even of one of the largest type, which are fifteen feet high—with its inevitable two dots for eyes surrounded by a tracery of curvilinear devices, can seem merely decorative, but when several of them are together the eye dots suddenly take on an implacably concentrated power of staring.

Perhaps even more impressive are the huge, communal long houses. They are sometimes hundreds of feet long and fifty feet high at the entrance, sloping down to about 12 feet high at the back, and they look like the carcases of gigantic animals with the jaws propped open by huge posts. They are made on the same principle as the wickerwork animals which are kept in the sacred section at the rear. The bodies of the members of other tribes taken for sacrifice were sometimes forced into these wickerwork animals and pulled out through a hole in the stomach, and Mr. Newton suggests that this is probably a re-birth ceremony in which the victim becomes a member of the tribe that killed him. The affinity between the basketry animals and the long houses is almost that of an animal and its litter, and it's not surprising to learn that the first 'famous man' of one of the tribes is supposed to have turned himself into a giant pig and split himself open to make a house for his people several miles long. There is no evidence that any of these tribes worship Gods and even their 'famous men' are not particularly reverenced. According to Mr. Newton, the most pervasive supernatural element seems to be the quality called 'imunu,' which is associated with thunder and the noise made by the things called bull-roarers, and is probably to be identified with the life force.

The peculiar sympathy I feel for Mr. Newton's treatment of this area of Oceanic culture may well be due to the fact that he was a poet and an intimate friend of avant-garde artists before he became a museum official. His own first reactions to primitive works were like those of artists and critics. He treated them as independent entities and looked upon differences in the use of a traditional language of forms as modifications of content, and the fact that he now perceives that they may have no such significance for the Papuans doesn't lead him to suppose that the use made of their forms by modern artists is 'illegitimate.' It's become pretty clear that the quality of 'imunu' to which the tribes attribute supernatural powers is often at its strongest in objects which are of little artistic consequence. These objects are only seen in the secrecy of initiation rites, and they gain their sacredness from their association with the terrifying sexual violence to which the young initiates are submitted.

On the basis of a study of the available documents, Mr. Newton puts the types of art objects into an ingenious order of descending magical potency which corresponds wi h an *ascending* order of artistic value, and although his ingenuity might not please the anthropologists, it has what T. S. Eliot once called 'the logic of the imagination.'

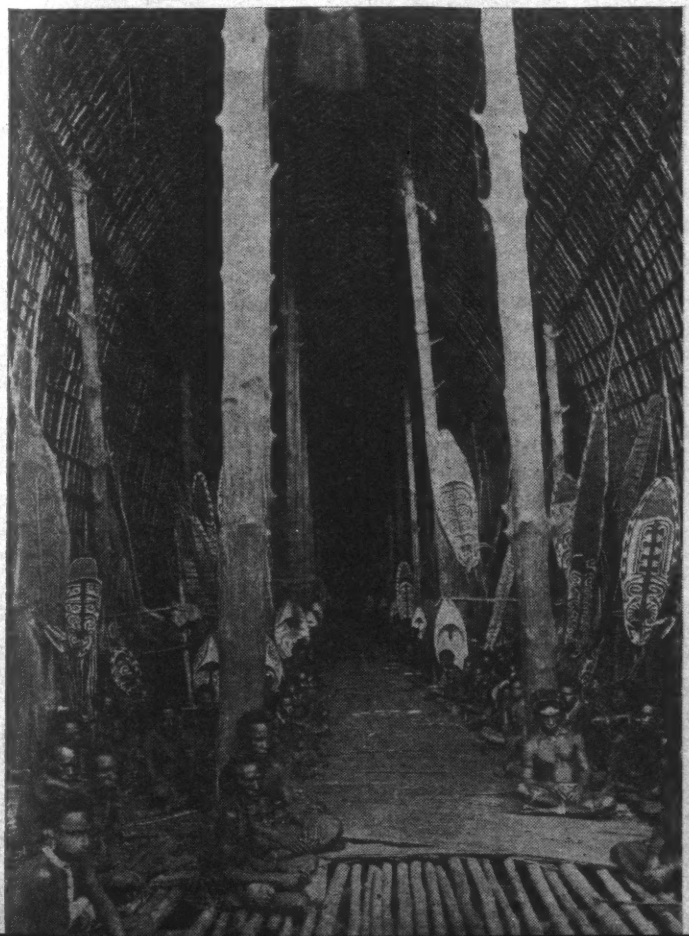
'One may guess,' he says, 'that in the Papuan Gulf there is a tension between the desire to have a secret and a desire to display the secret. The initiated men must conceal much of their ritual life from the women and uninitiated boys: but to do so completely would be to starve their need to assert their sexual superiority.' He goes on to build up the sequence of objects, which I have attempted to simplify by suppressing one or two of the links and the rather confusing Papuan names: the bull-roarers are very sacred and kept in the strictest secrecy; the bull-roarer shaped boards are also kept in secrecy but versions of them are placed where they can be seen by the men; unimportant versions of the same boards are given to uninitiated boys who haven't yet seen those of the men. Finally, the bull-roarer shaped masks, which are often the largest and most spectacular of the objects, are worn publicly so that some of their power is revealed even to the women. 'Thus,' says Mr. Newton, 'the same form is repeated in, so to speak, wider and wider contexts of decreasing secrecy. By the time the mask reaches the audience of women its prototype, the bull-roarer, is already at several removes. Its "heat" is safely dissipated. The secret is safe, yet it has been revealed sufficiently to prevent

**Art Styles of the Papuan Gulf.* Distributed by University Publishers Inc., New York. $6.00.

its retention from being a source of frustration rather than satisfaction.'

There is no analogy for this in our own society, except that, as Mr. Newton points out, one aspect of it at any rate is not entirely alien to us since a fragment of the True Cross is judged holier than the ceiling of the Sistine Chapel. But I suspect that his notion of a kind of ratio between a decrease of potency and an increase of artistic value might throw some light on the 'creative process' as it is conceived by the modern painter. The work the painter displays refers to some quality similar to 'imunu.' It is intimately related to the secrets of the body and the psyche, but the 'heat' is somewhat dissipated by being passed through the kind of 'cooling chamber' which Fry and Bell had in mind. The most popular term for this cooling process was Bell's 'significant form.' It was never satisfactory, and is now completely out of fashion, but there is as yet no equally succinct term to replace it. In any case, now that the current language of painting is non-figurative it is more of a protection for the painter's respectability than the spectator's, since no one need have any reason for feeling a sense of shame in front of an abstract. Professor Wind suggested in his Reith lectures that although more and more people now look at pictures they have ceased to be upset by art, and that this is because it is a marginal activity of no vital importance to society. But very little abstract expressionist work is out to shock; on the contrary, it is as ingratiating as it knows how to be, since a great deal of it is intended to envelop us and all of it is intended to give us pleasurable sensations. I think that more people are looking at these new paintings without being shocked by them because they accept them as acts of what might be called 'decent exposure'—to differentiate them from acts for which people can be prosecuted. Those who go out of their way to look at canvases covered by marks or sheets of colour which the painters themselves claim not to understand, are really in much the same position as the Papuan women entranced by the spectacle of secret signs.

Interior of a men's house in Kaimari, showing the effect of ranks of ceremonial masks in the long perspective of the interior. From Art Styles of the Papuan Gulf.



Mr. Adrian Stokes, in a brilliant little book on contemporary painting,* which is written obscurely in parts in order to provide a screen for some statements of devastating and far-reaching simplicity, suggests that the typical painting styles of our time are determined by a distortion of our environment which was started by the breakdown of architecture in the middle of the last century, and he sees the painter's use of the curious but now universally accepted conception of the 'sanctity' of the picture surface as an attempt to take over the architect's function and provide us with an organic environment. Essentially, he sees this new art of the painter as an erecting of walls; some of them penetrable, other impenetrable, and he reminds us that 'Leonardo's homogeneous wall with adventitious marks . . . has been an especial spur from the time of the Impressionists.'

Paintings of the 'impenetrable wall' type are scratched or splashed to emphasize the wall's resistance and perhaps create a sense of strength and security. Many of these bring to mind the atmosphere of the Lascaux caves and re-present the same sense of sanctuary combined with traces of human presence which are similar in that the precise meaning of the drawings escape us.

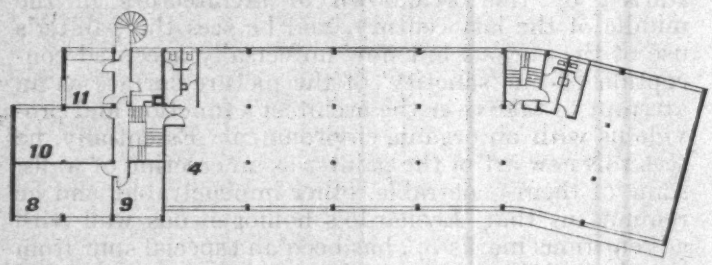
Mr. Stokes relates the paintings of the 'penetrable wall' type to the 'screen colour' we see when we close our eyes, and he considers that both types, in their stress upon homogeneity and limitlessness, represent an unconscious restitution of the earliest of all human experiences—that of the child feeding at the warm, boundless, bountiful, enveloping breast. Having persistently experienced an intense feeling of satisfaction in front of such paintings, particularly those of the 'penetrable' kind—perhaps most authoritatively represented by Rothko and Pollock—I find this analogy quite shatteringly illuminating. But whereas Mr. Stokes establishes this correspondence chiefly to deplore it, I look upon the paintings of Rothko and Pollock as a triumph of the human spirit, and if this art is regressive I think it less harmfully so than the vicarious human sacrifices achieved through the formal distortions of an earlier phase of twentieth-century primitivism. It is a just acknowledgment of the paintings of Rothko and Pollock that their art is now described as 'the abstract sublime.'

Mr. Stokes says that 'the painter has been happiest when surrounded by an actual architecture which provides an assumption (a living style) that made it unnecessary to reconstruct *ab initio* for every work the rudiments of the body and of the psyche, but until that time comes again, the painters of the 'abstract sublime' will have to go on creating an environment instead of adorning it.

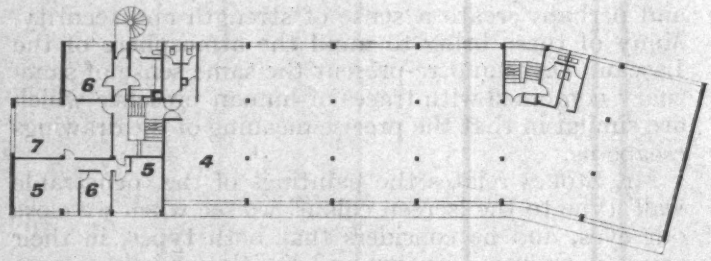
* *Three Essays on the Painting of our Time.* Tavistock Publications.

FURNITURE SHOWROOMS AND OFFICES, WATFORD

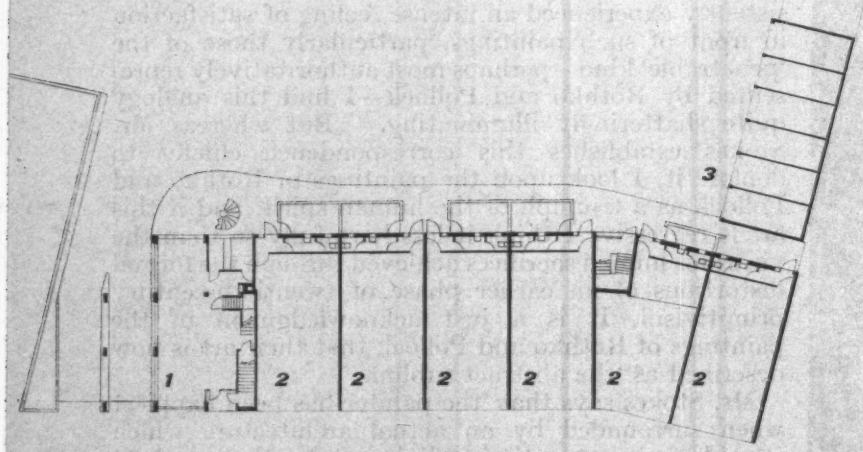
ARCHITECT | **ERNÖ GOLDFINGER**



second floor plan



first floor plan



ground floor plan

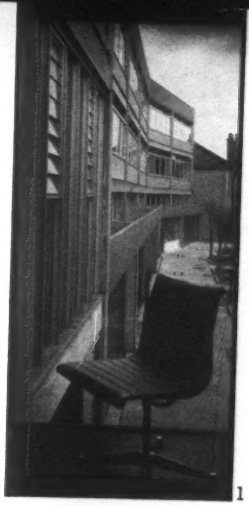
Designed for Messrs. Hille, the building is sited between the company's existing furniture factory and the main road, having its main frontage parallel with the road. It has, however, been set back to allow for future road widening.

It contains showrooms for the display of the company's furniture, administrative offices for the company's use and further office space and six shops along the road frontage, both office space and shops being for letting. The accommodation to be used by Messrs. Hille has therefore been planned as a separate unit, but with communication with the lettable areas. The factory can be reached both beneath and alongside the new building.

The structure is a reinforced concrete frame and floors with panel infilling of white sand-lime bricks. Provision has been made for the addition of another floor in the future if needed. External concrete is either bush-hammered or rubbed to expose the aggregate. The external spiral escape-stair is of precast concrete units built around an *in-situ core*. The metal windows, which are painted white, have photobolic screens (ledges which cut out light from near the window and throw it on to the ceiling to produce better overall distribution). Opening lights pivot horizontally. The furniture showrooms are lighted through standard aluminium patent glazing sections, with banks of opening louvres.

Internal plastered partitions are prefabricated and demountable. Internally the concrete frame is exposed and the brick panels are left fair-faced, but some of the office walls are faced with cork to provide areas for pinning up notices, etc. The walls of the boardroom are faced with grass-paper and the ceiling with acoustic tiles. Flooring generally is thermoplastic tiles, with terrazzo on the staircase and blue quarry-tiles in the showroom. Telephone wiring is run in metal floor-skirting ducts to provide easy access and flexibility. Heating is by radiators supplied from an oil-fired boiler.

key
1, showroom
2, shops
3, parking and garages
4, office space
5, offices
6, secretary
7, boardroom
8, accounts
9, buying
10, drawing office
11, kitchen



1

1, looking along the front of the building from the projecting mezzanine showroom bay. 2, exterior of showrooms with entrance on right.

2

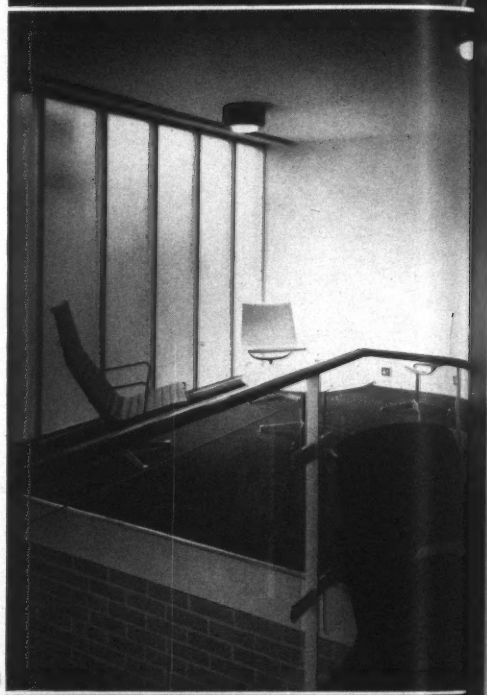
FURNITURE SHOWROOMS AND OFFICES, WATFORD

3

3, the spiral staircase at the rear of the showrooms. 4, looking along the shop fronts to the showrooms. 5, staircase to the mezzanine showrooms, shown in 6. 7, the first-floor landing, with an abstract painting by Show-Yu Lin.

4

5



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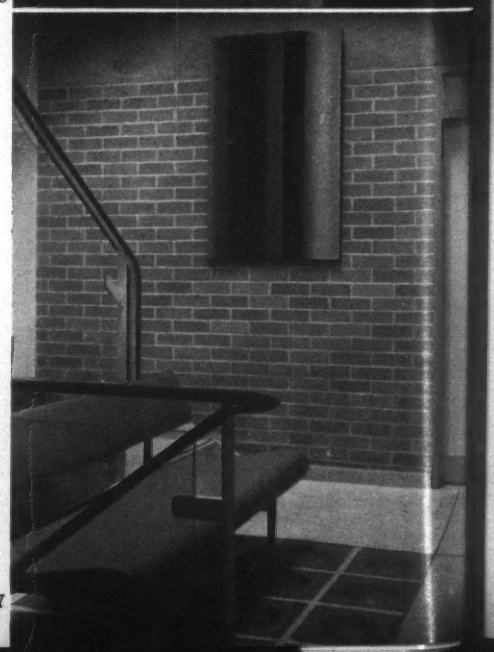

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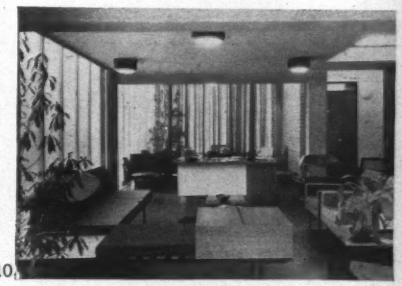
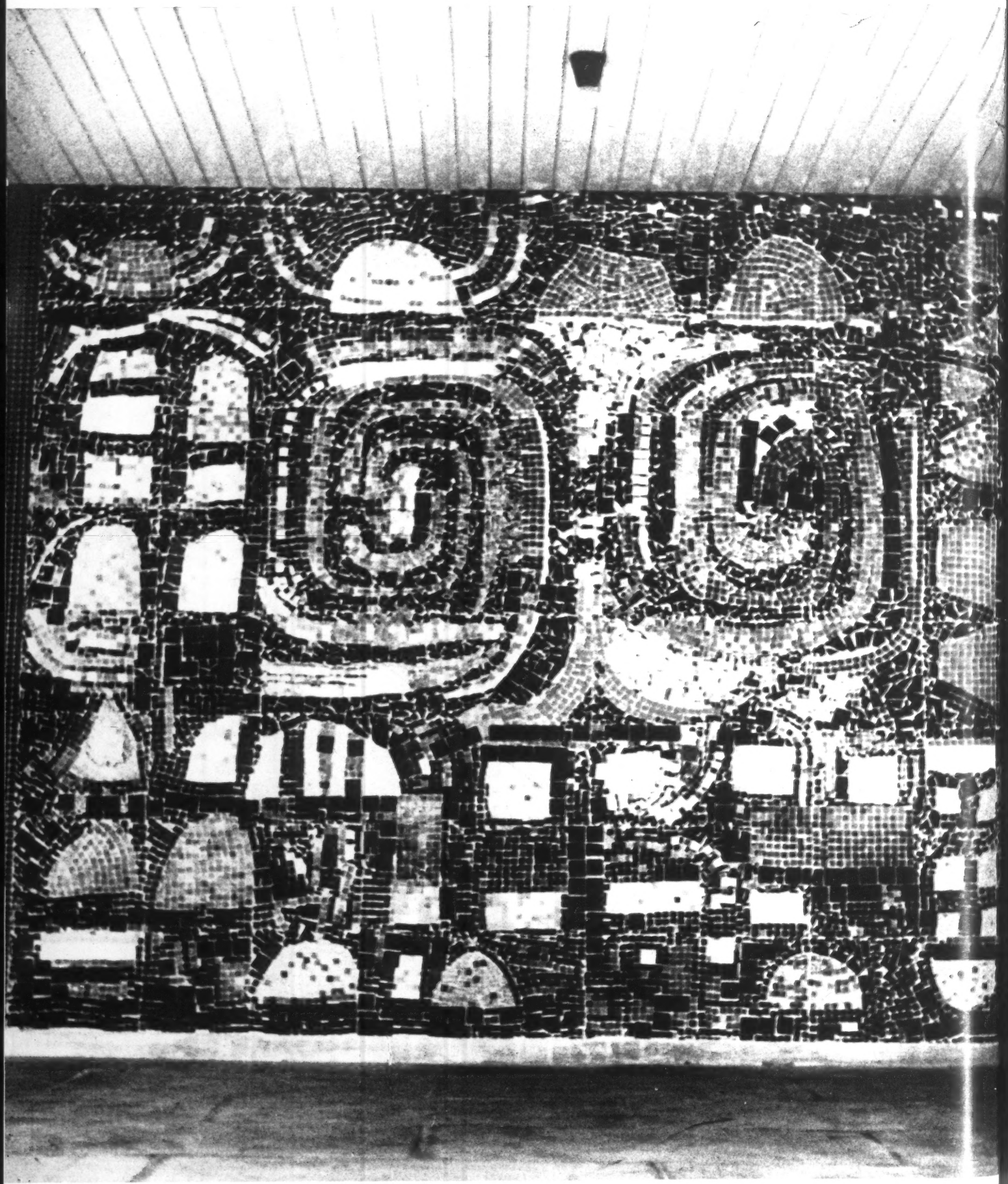
photographs by H. de Burgh Galwey



10

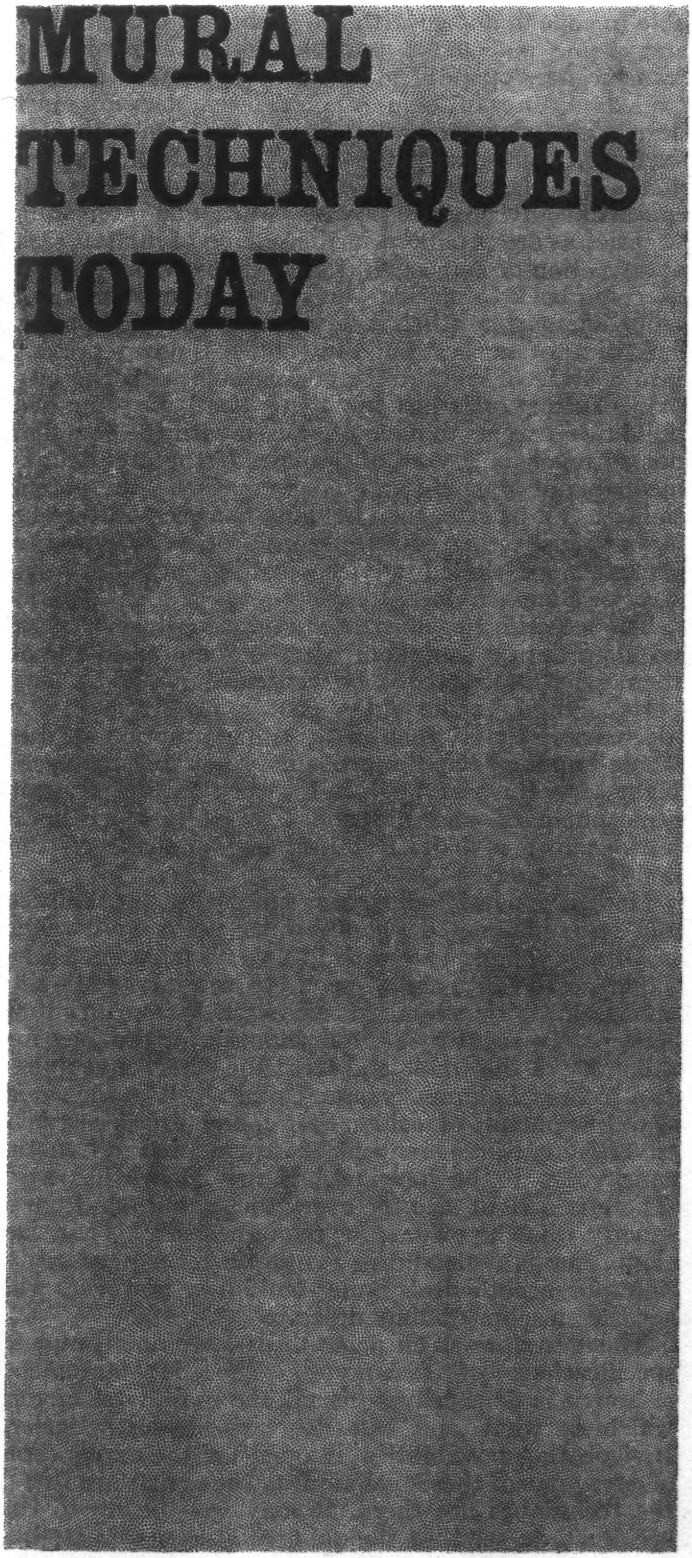
8, 9, the mezzanine showroom with the precast concrete bay with coloured glass windows. 10, general view of the showrooms, which have a quarry tile floor, bush-hammered beams and sand lime walls.



Glass and ceramic mosaic by Fred Millett using paper transfer method—see page 99. It is in a school at Sheffield by the Architects' Co-Partnership.

Oliver Cox and Fred Millett

MURAL TECHNIQUES TODAY



William Morris defined architecture as the art of building suitably in suitable materials. 'Let us begin by considering what materials are available and how we are to use them and then build them up into such a form as will put us in the position of architects who are alive and practising to-day, and not merely handing over to the builders all the difficulties of the profession.'*

New materials and new techniques are now becoming available with increasing speed, and with the widening complexity of the architect's tasks there is a very real danger of his creative control dwindling as the plethora of contractors' packaged goods increases. Yet with this rapid upsurge of new technical invention, how is the architect able to give time to study their potential effects on the building's design, construction and appearance? For the few brilliant universal men like Corbusier this is no problem, but for most of us, as in other matters, it means absorbing another skill into the design team.

It may seem odd to consider the artist in this connection, but it would not have seemed so 300 years ago. Admittedly it is a long time since artists have been deeply concerned with building matters, and although they are at present largely out of touch with them, this is not an irremediable situation—in fact a number of artists are already beginning to turn their attention to the problem of building, its materials and its methods.

One role that the artist could fill is that of agent to the architect for the testing of materials and for 'playing about' with them—someone to digest them aesthetically as well as technically, the latter being the bias normally given by contractors and laboratories. The artist's professional concern with form, colour, image-creating and the communicating of ideas suggests that he may have a valuable contribution to offer in making the task more joyous and the achievement richer and more human.

Much of the excessive experimentation of modern art, with its esoteric character, is due to no more than the insistent type-casting thrust upon the artist by others who think that this sort of creative sensibility is best kept in the studio where it belongs. Let us bring this ability out into the daylight and put it to work; only those artists utterly committed to uniqueness would shun this invitation. The working habits of the sculptor or the painter are after all those of the craftsman, and it is up to others to extend the range of his tools and materials. Cannot a sculptor, for example, devise a wall that is interesting aesthetically as well as serving an acoustical function, or a painter contribute ideas of pattern and of colour to some factory-made component?

*'The Influence of Building Materials on Architecture', an essay in the volume *Architecture, Industry and Wealth:* collected papers by William Morris.

A fresh look at the methods of collaboration is also needed. The work on a series of projects on a consultancy basis initiated successfully at the London County Council creates the opportunity to build mutual understanding by carrying forward experience from job to job, and enables the artist to feel the security and commitment to a group enterprise similar to other members of the team. Peterlee*, and the absorption of the artist into the planning team to the point where the artist as individualist disappears and emerges instead as a contributor to the general character and identity of a scheme, is another venture and the only one to date to demonstrate this approach.

Modern building is increasing in scope and scale, whole areas of mixed use may be designed together, yet we still think of the occasional mural in an individual building in terms of a windowless wall which all too often ends up looking like a framed picture again—only this time in concrete. The new dimension of civic design needs to be thought out aesthetically and on the appropriate scale, and the scope of the artist's contribution and his ideas and vision of the urban scale remain to be investigated. Do the forms and colours of recent paintings throw out no seeds of cross fertilization as did the work of Mondrian and the cubists to the earlier periods? Do the tangled web of Pollock†, the subtle geometry of Poliakof and De Stael, the intricacy of Klee or the calligraphy of Mathieu offer nothing to our consideration of floor and roofscape, tops and bottoms of buildings or the use of neon? Somehow the static conception of our ideas about enrichment and of the creation of a sense of environment, seem utterly inadequate to the real physical situation where our sensations and angles of view are continually on the move.

Some artists *are* trying to get to grips with new materials and techniques and some are battling with the problem of how results are achieved in building, looking at the problem with the factory, the machine and the operative in mind. They are observing the relative economy of the architect's design effort where the aesthetic conception is that of a designer whose work is executed by others, and contrasting it with the tradition of manual responsibility of the artist-craftsman. They are absorbing the lessons of mass production and prefabrication as aids to working in a larger scale with less effort and permitting greater and more selective design control.

In applying themselves to these problems new possibilities and methods of approach begin to emerge. There is a freedom and vigour here that contrasts strangely with the architect's congenital timidity, too conscious as he so often is of his many roles, particularly that of client pacifier. From a study of these efforts may spring a fresh awareness of new potentials and a glimpse of wider horizons.

Why, for example, does concrete, in order to be truthfully expressed, have to look like hairy wood? Of course the answer is that it does not—and in fact many more appropriate formers for the fluid material exist. Some of them, examined here, have the capacity to produce a rich and rugged surface or large-scale modelling which can transform the inherent uneven drabness of the basic material into something rich and rare. But not, of course, by accident—only by deciding what you want to do, that it is worth doing, and going at it full blast and no compromise.

The extensive use of glass in buildings brings new aesthetic possibilities of translucence and reflection, but it also brings with it technical problems. Reinforced synthetic resins show promise of being able to cope in one go with the problems of both sheet and frame and make possible design control over translucence, opacity, gloss and hue as well as controlled mixtures of them. Again a design decision must be made—instead of selecting a natural marble, for example, you specify the mix. From these experiments it is clear that if you really want to do so you can artificially produce precisely the same interesting vagaries as are produced in the setting of molten rock at a fraction of its cost. But once that is done there is no going back to marble—and there is no going in for imitation marble either. A new creative act is required.

In most of our best buildings colour is now repressed into a state of conformity comparable with the city man's suiting or is just not there at all. In some bad buildings it seems to have been used with the abandon not so much of joy as of despair. If the architect is incapable of grasping and using creatively the potential of a full palette, then he must not pretend that he is, but must either educate himself or be prepared to accept more skilled advice, just as he does with structure and services.

The experiments illustrated and described here are no more than a sample of what is going on. Some of them can undoubtedly be criticized as fiddly and better suited to the old approach of the jewel-like 'decorative panel' than to a transformation of the whole building, but the artist may not be entirely to blame for this, as he has to work in the current atmosphere of mistrust and fear of any aesthetic letting down of hair. It takes time to shake off the bonds of primness.

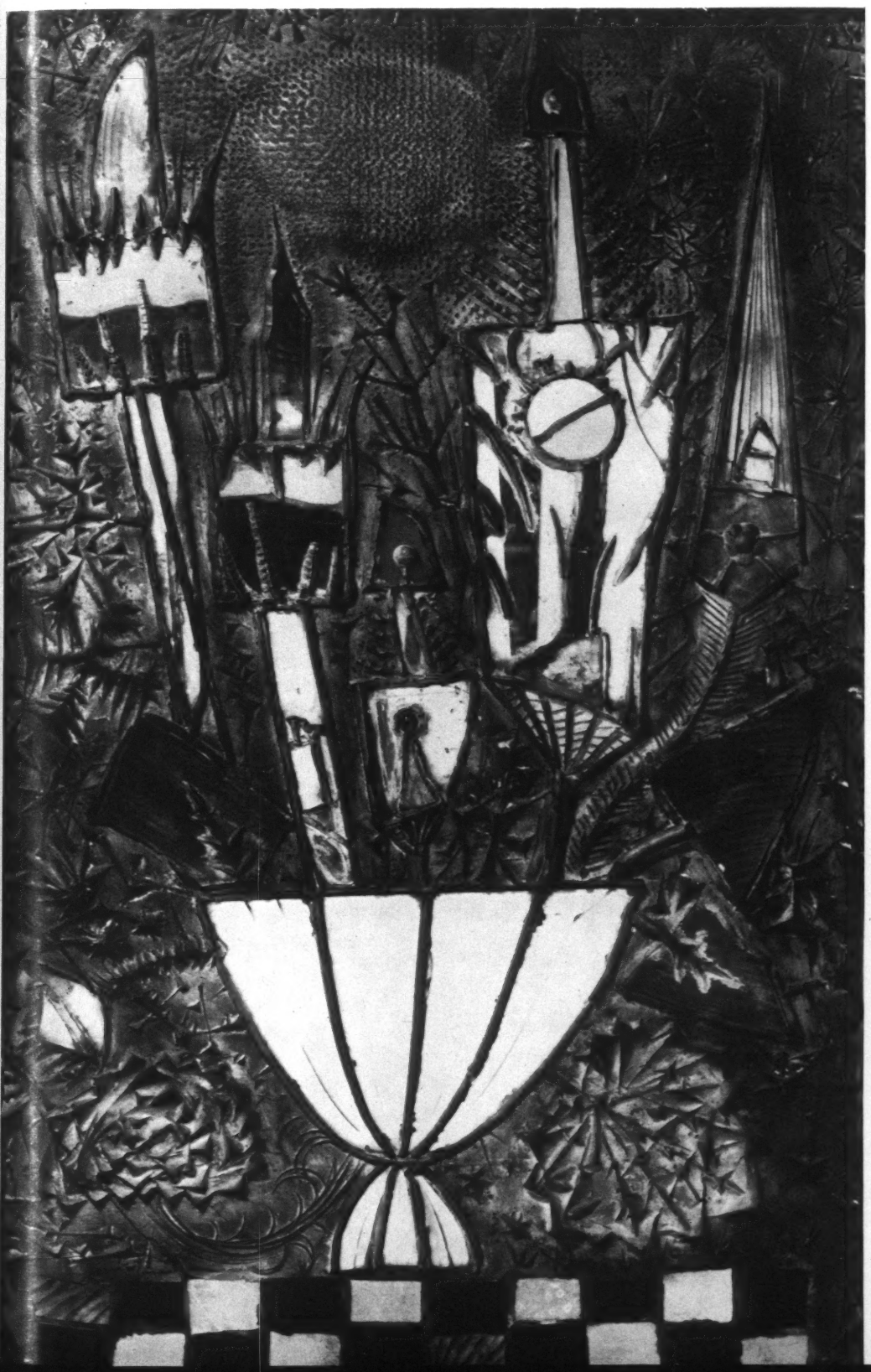
Here are new challenges, stimulating possibilities and some inherent dangers. To run amok in a welter of Disney techniquery would serve no purpose. Technique is after all only a means to serve an end—the integration of the visual arts into a whole from an initial concept. To substitute the fascination of the part for the unity of the whole and treat the artist or sculptor as a technical gimmicks man, could result in the same senseless pursuit of fashion that characterizes so much advertising, where creativity is squandered in frenetic endeavours to be 'original.' Henry Moore has said 'There is a right size for every idea'; and one knows exactly what he means, for monumentality is not size alone, nor is a doodle in synthetic resin necessarily right for a cathedral. Some buildings, however, will get the enrichment they deserve.

The descriptions on pages 99-100 are not complete specifications of techniques. The flat statement of how it is done leaves unsaid the most vital factor, which is what you can do with it aesthetically. Invigorating possibilities lie open for the exploration of every one of these techniques. The artists are there; the techniques are there. It may well be up to the architects to see that the opportunities are created.

*See AR, February 1961. Victor Pasmore was the artist.
See page 131 of this issue.

On the following pages are illustrated recent examples of murals in the various techniques referred to in this article, and of stages in their execution. The techniques are described in detail on pages 99-100.

1



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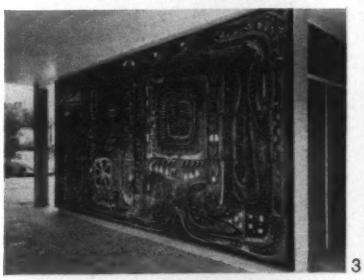


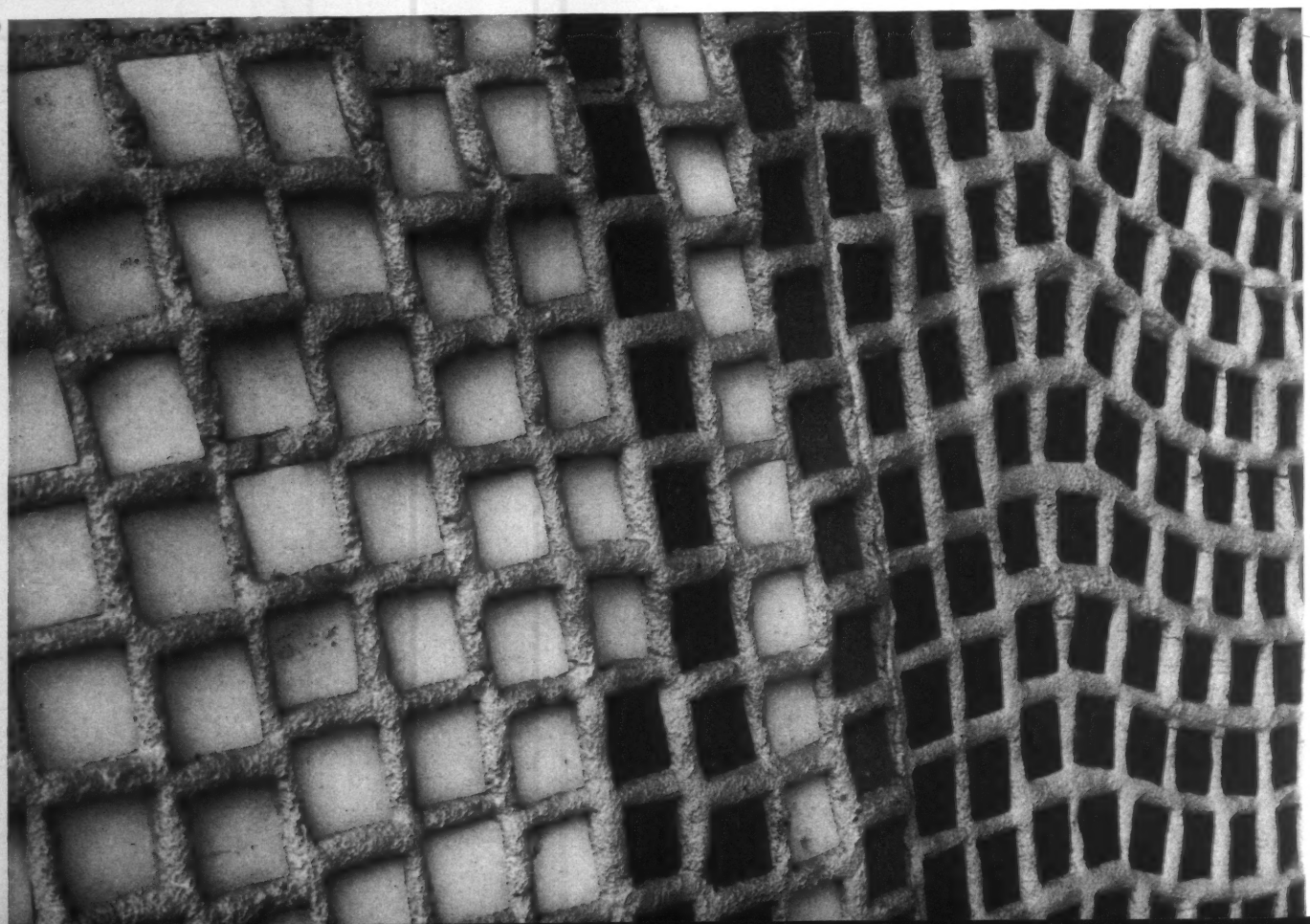
3

4

Precast concrete

1, *precast concrete panels cast on clay, using glass inserts, by Stephen Sykes.* 2, *preparing clay beds to moulds and panels coated with pigmented resin for a cast concrete mural in a housing scheme at Wilson's Grove, Poplar, by the LCC Architects, carried out by George Mitchell.* 3, *the completed mural.* 4, *close-up of a part of it.*

5



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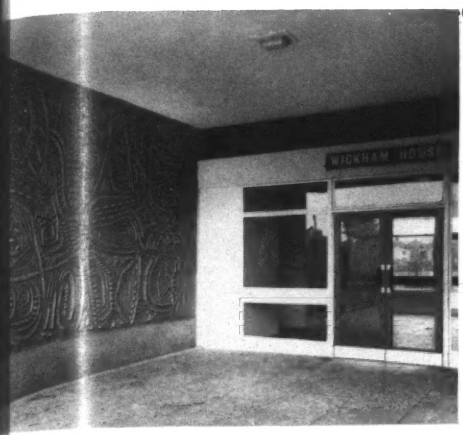

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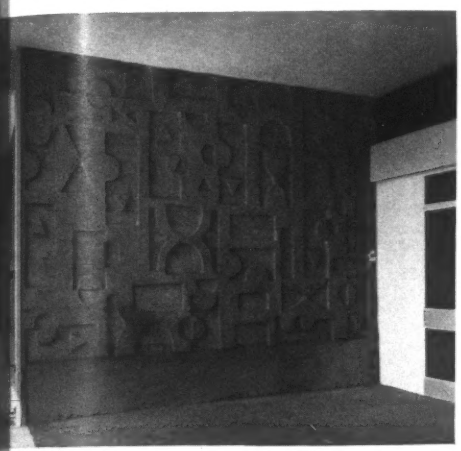

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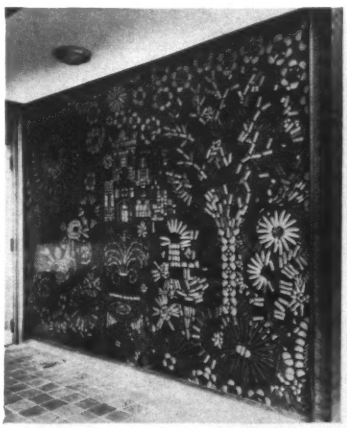
8

In-situ concrete

8, Antony Hollaway drawing on a sheet of foamed polystyrene to produce a calligraphic design with an electric soldering iron. The result is used as a liner to shuttering for an in-situ concrete wall. The finished wall (in the entrance hall to flats at Clive Street, Poplar, by the LCC Architects' Department) is shown in 6 and in close-up in 5 (facing page). 7, another wall on the same site cast against a shutter lined with cut sections of polystyrene stuck to a thin sheet of the same material.

10



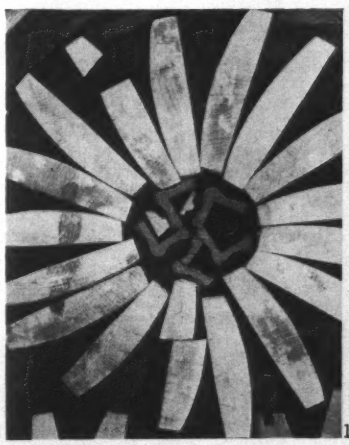
11

Mosaic

10, mosaic pressed into a wet screed-bed with each piece individually placed by the artist, Philip Suffolk, in situ. It is on a staircase wall at Mayfield School, Putney, by Powell & Moya. 9 *(facing page), close-up of part of the same mosaic.*

Wood mosaic

11, cut hardwood sections placed on base board by George Mitchell, filled with resin, sanded and screwed up as prefabricated panels into flats at Ladywell Lodge, Lewisham, by the LCC Architects. **12,** *close-up of part of the design.* **13,** *the artist at work on the same design.*



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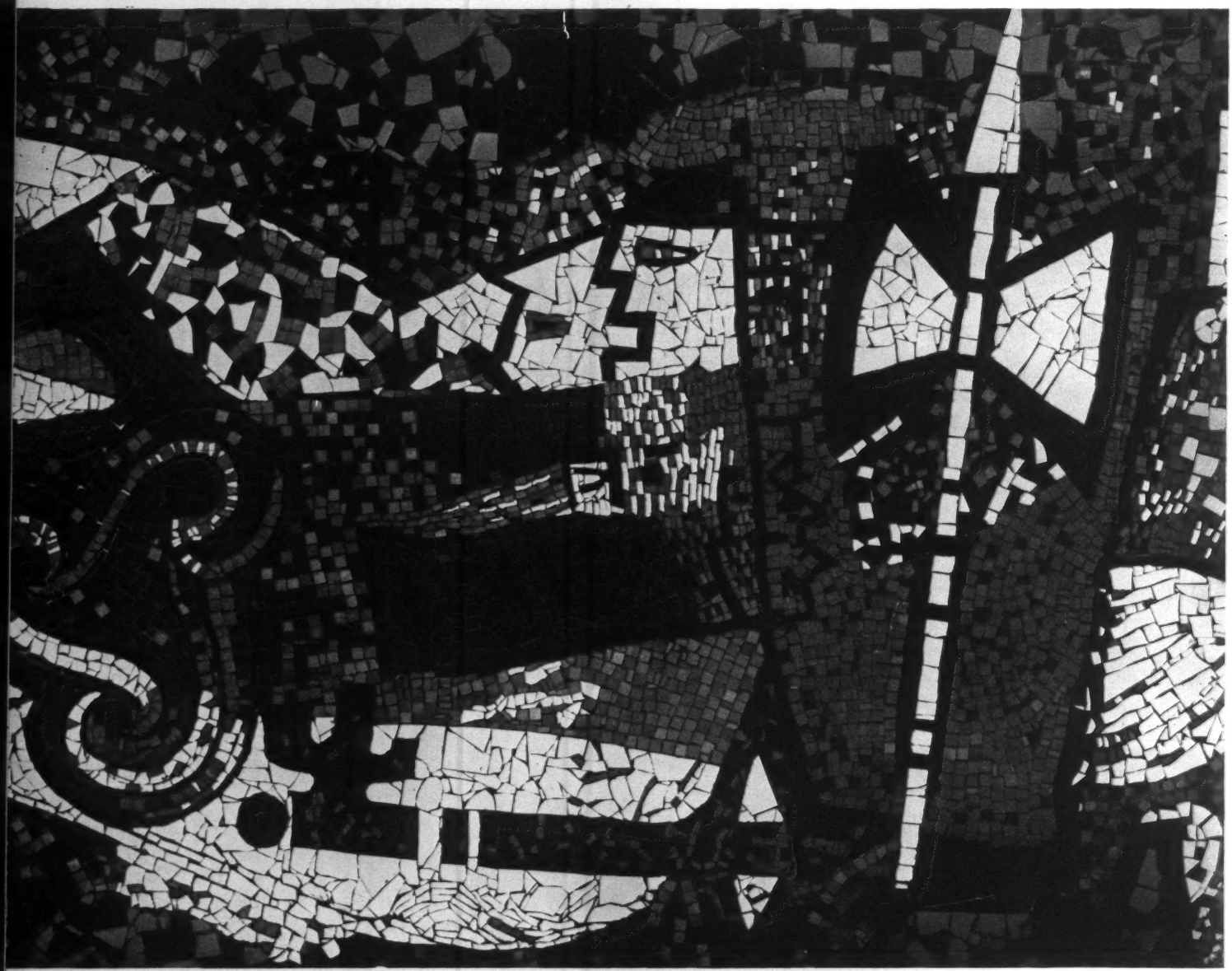

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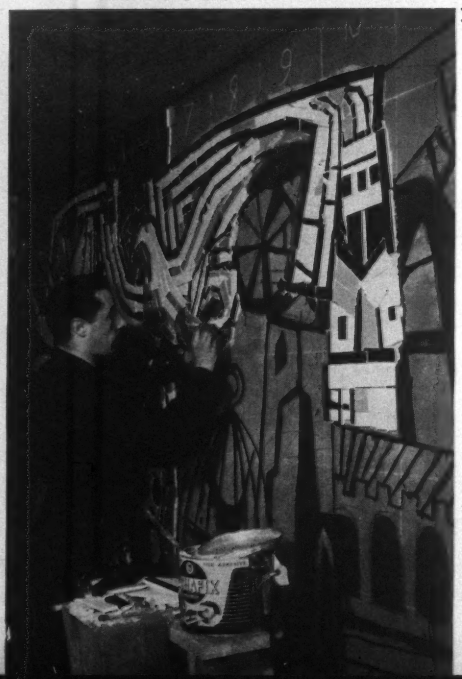
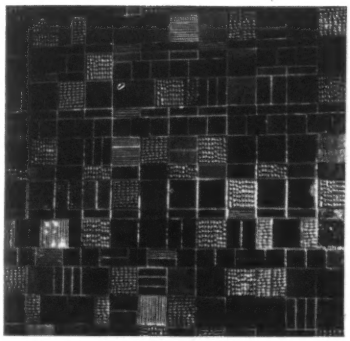


Broken tile

15, *a mosaic formed from sections of cut standard tile with areas of glass mosaic, fixed to a rendered bed with adhesive and grouted, at Brandon Estate.* (*LCC Architects.*) 14, *close-up of part of the same mosaic.* 17, *setting the broken tile direct on to the wall.* 16, *glass fibre reinforced resin panels prepared in the studio with tiles of various thickness stuck to the panels with resin, grout being dispensed with: Leatherdale Estate,* (*LCC Architects;*) *artist, Antony Holloway.*



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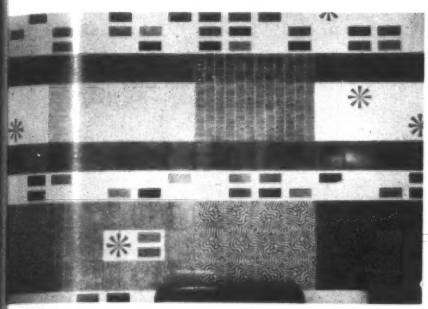

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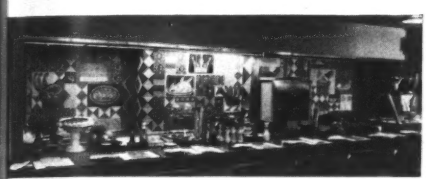
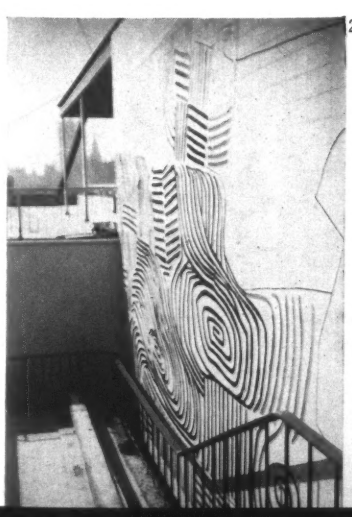


20

Ceramic tiles

18, *standard tiles by Kenneth Clark of various sizes and texture.* 19, *standard tiles by Ivor Kamlish, of Carter Design Unit.* 20, *a design by Peggy Angus in a public house at Notting Hill Gate, using standard and individually designed tiles.* 21, *tile mural by Victor Pasmore, South Bank,* 1951 (*architects, Design Research Unit*). 22, *direct execution, by Fred Millett, on to frost-proof exterior standard tiles using 'under glaze' technique, for a school at Coventry* (*City Architect*). 23, *stencilled tile using prepared acetate sheet stencil units with pigment rolled on, by Antony Hollaway for LCC housing at Poplar.* 24, 25, *decorated and fired relief ceramic units, modelled by Geoffrey Wickham.*



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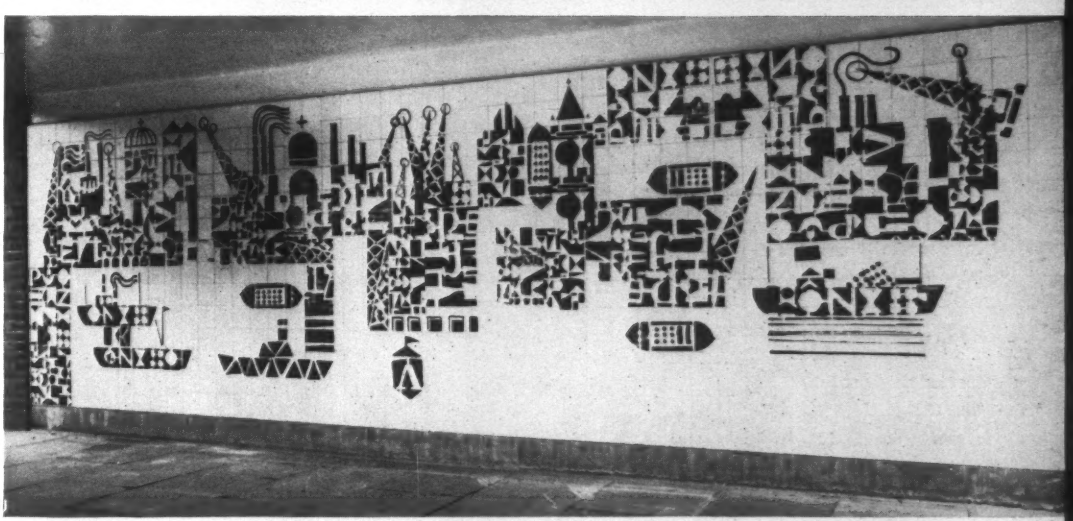

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26

27

Sgraffito

26, *cutting into the green plaster, the start of a design by Geoffrey Wickham.*

Incised rendering

27, *mural on a staircase at Brandon Estate, LCC, in cement render by Antony Hollaway.*

Routed and filled fibrous plaster

28 *and* 29 (*below*), *pre-cast panels in plaster, routed and filled with resin in the LCC Ivy Walk Estate, by George Mitchell.*

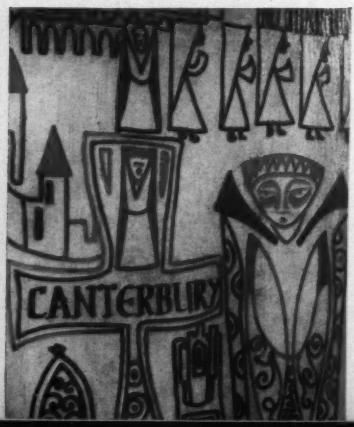
Precast plaster

30, *detail of a design by Stephen Sykes in plaster cast on to sand.* 31, *detail of wall in the Olivetti showroom, New York, by Constantino Nivola.*

Routed chipboard

32, *George Mitchell using a routing machine on chipboard to form grooves which are afterwards filled with resin and sanded.*

28



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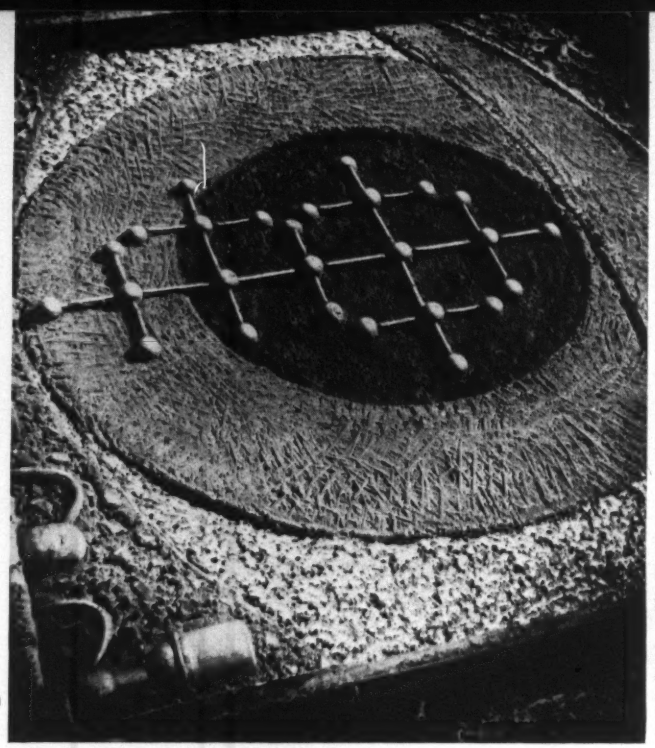

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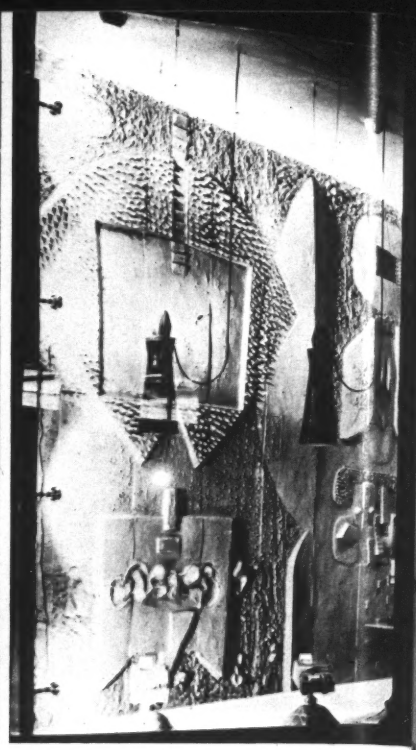

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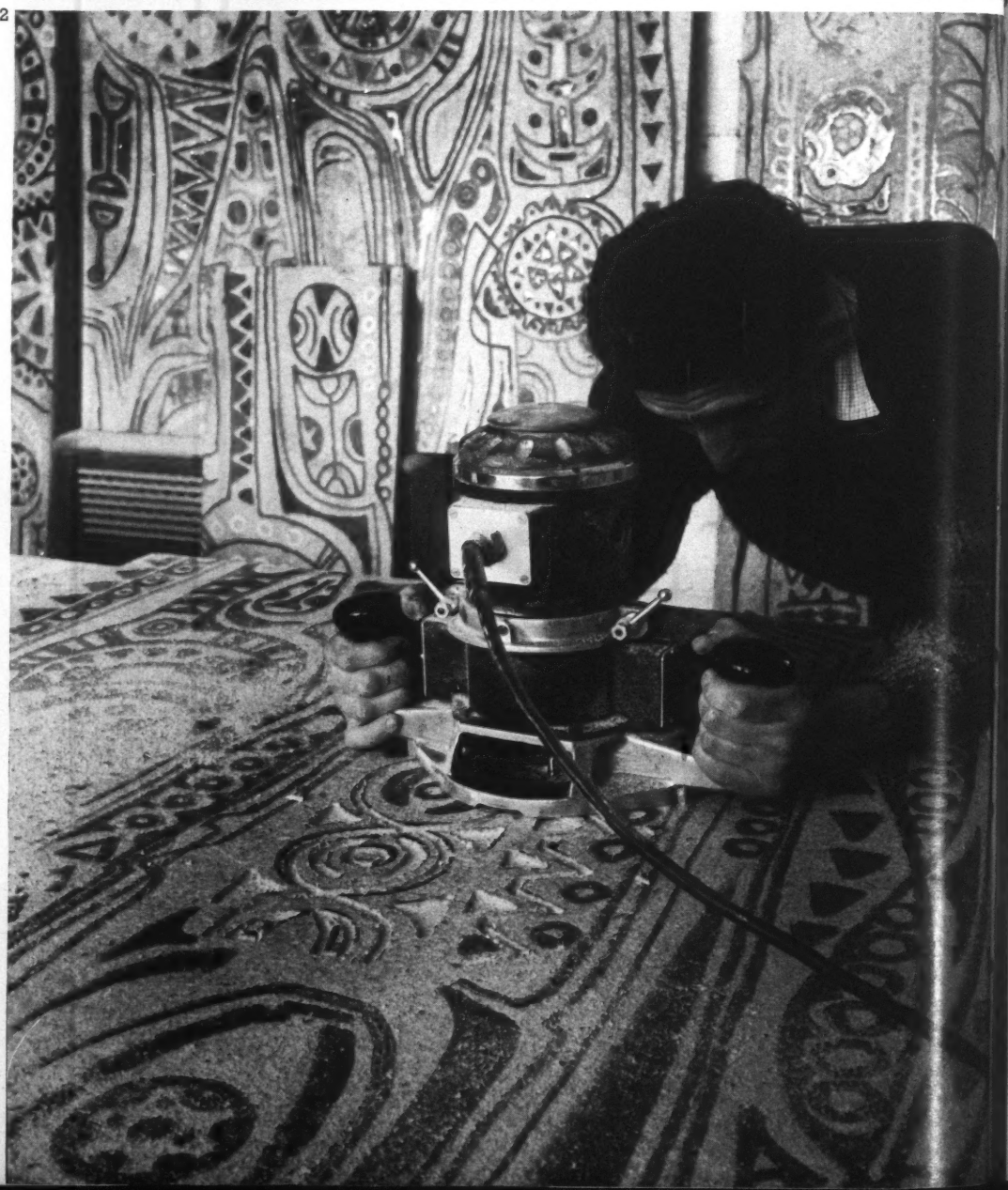

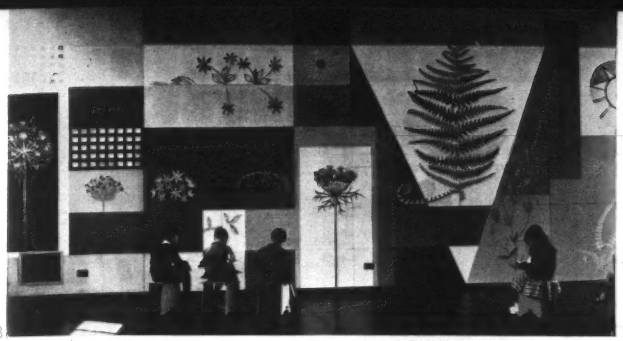

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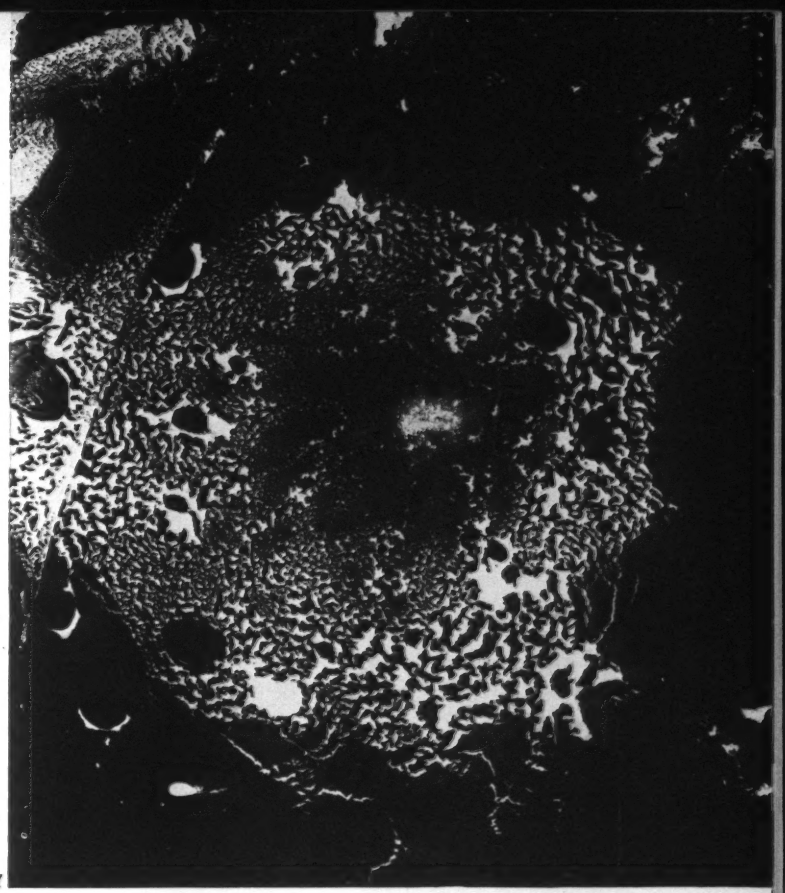

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Painting

33, emulsion BSI standard colours were applied by operatives on to asbestos panels and then worked on by Fred Millett for this mural in a school at Mansfield (Notts County Architect). 34, direct painting on to a plaster wall in oil paint with a wax medium by Fred Millett for University of London coffee bar. 35, a fresco panel by a student, Joanna Pogonowska, at Hammersmith School of Art. (below), emulsion paint applied direct to vermiculite ceiling panels by Oliver Cox for Wokingham school (MOE Architects Branch).

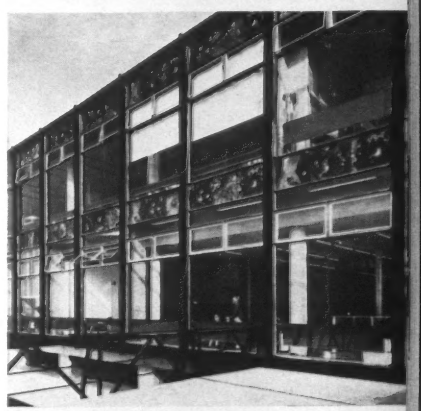
35

Glass

Curtain walling units for Gatwick Airport (architects, Yorke, Rosenberg and Mardall) were designed by Peggy Angus and carried out by a manufacturer screening the designs in oxides on to glass and firing them. 37, in close-up; 38, the glass units in position as part of the wall of the passenger building.

Brick

39 and 40, designs by Hans Coper for structural acoustic bricks to contain sound absorbent material in standard brick sizes.



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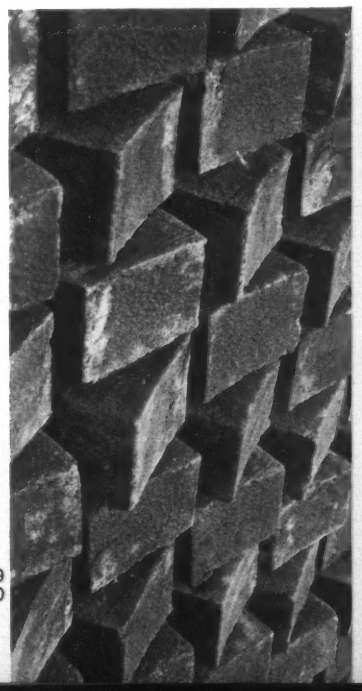

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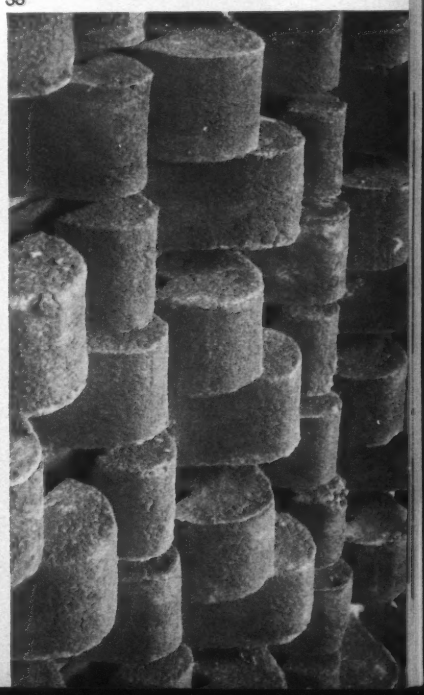

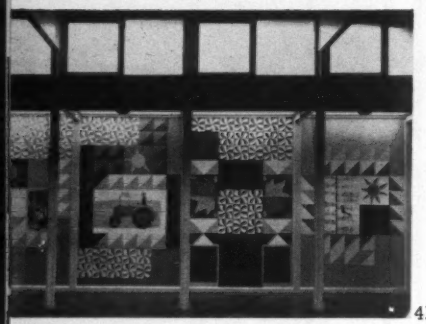

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Paper

41, sheets of paper, 20 in. by 30 in., were silk screened with various colours to provide the units of a variable design by Fred Millett for a school by Coventry City Architect.

Synthetic resin

42, direct painting of pigmented resin on to glass fibre re-inforced resin sheets by Antony Hollaway. 43, relief panel in sand and pigmented resin poured on to clay mould, designed by George Mitchell.

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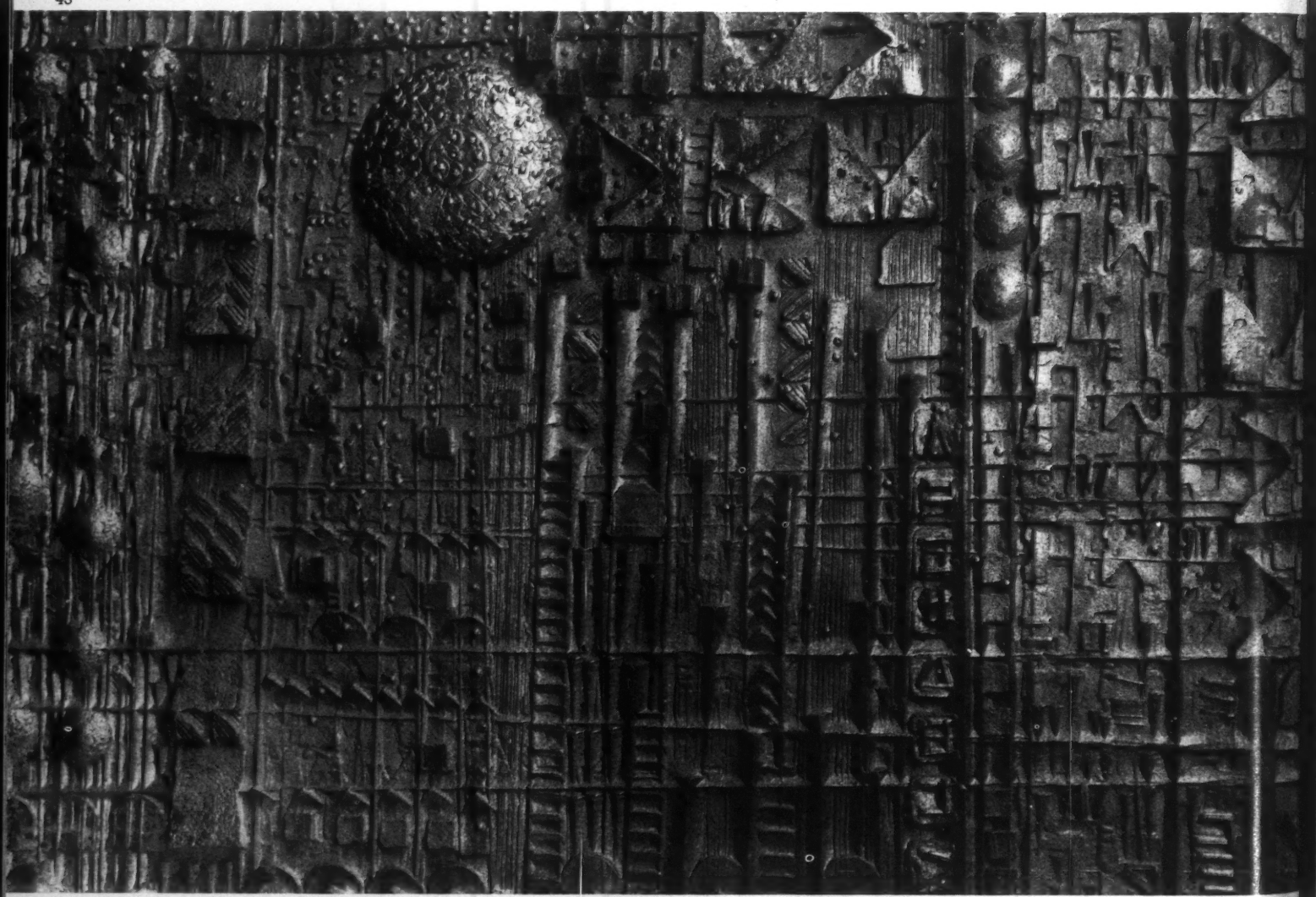

CONCRETE—PRECAST

Casting on clay

Into simple wooden formers is laid a thick base of modelling clay, in a fairly soft, malleable condition. The clay is then modelled and cut to the required shape or pattern and the mould filled with concrete. When set the clay can be dug out of the face of the concrete and reused if necessary. In this way elaborate non-repeating reliefs can be created at extremely low cost. It is found that the surface of the concrete picks up a little of the clay colour, and since this is uneven it can add considerable interest.

The characteristic of this technique is that each slab is designed individually for one cast only, and although broad and elaborate effects can be easily obtained at little cost, the implication is that the moulding of the clay is carried out by the artist under studio conditions. It is thus more suitable where a relatively small number of slabs is required and where the detail is to be viewed from close range.

Blocks cast in this way can be coloured by pouring on pigmented resin, which in running over the uneven surface forms pools of varying degrees of opacity and intensity; this can produce an effect of amazing richness and variety. The adhesion between the resin and the concrete appears to be extremely good and to be likely to stand up to external weather conditions—although so far as is known no such murals have been exposed to the weather for more than a year as yet. If used externally, however, as with paint, it is imperative to use pigments which are not fugitive, and this implies a certain restraint in the hue (and the depth of hue) employed.

Standard moulds—slabs cast by contractors

Where really large areas of cladding are required precast plain concrete slabs, formed with a sufficiently rugged texture, can provide a greater interest than can be obtained by an expensive exposed aggregate finish—and at less cost.

The implication of casting hundreds of panels means standardization and repetition of casting of a restricted number of moulds to an agreed pattern, and, therefore, reusable moulds are required. One idea, using simple wooden moulds, is the creation of the equivalent of a 'fount' of different shapes which, used different ways round and in different juxtapositions, can create a non-repetitive pattern of far greater dimension than that of the slabs themselves.

A further idea is that of casting on a preformed polystyrene sheet which has been vacuum-moulded over a specially prepared master. This technique has the advantage that any number of identical moulds can be prepared from patterns as impermanent as clay—or a large number of slightly differing moulds can be prepared rapidly by using as a pattern an assembly of blocks of wood—the arrangement of the blocks being varied each time.

There would appear to be interesting possibilities in the extension of this type of patterning into the field of paving-slabs—especially where large areas are looked down on from tall blocks. One thinks of the richness of the pattern formed by the narrow incisions in the surface of the Victorian cast-iron cover to the coal-hole. A variety of non-repeating patterns could be created out of a 'fount' of a few slabs with narrow linear incisions on the face.

For a more restricted scale, or where a flat surface is required, the pattern can be obtained by pigmented concrete. A linear pattern can first be extruded on the face of the mould in a light colour and the main colour used as a back-up. This technique, more suitable for use in the studio, can be adapted for use in the casting yard by extruding the pattern on to a thin net (made of paper) cut to the size of the slabs. These can be prepared in the studio, and when set laid in the base of the paving contractor's standard formers in which the slabs can be hydraulically pressed in the normal way.*

CONCRETE—IN SITU

Foamed polystyrene sheet

Large wall-size shutters are first faced with large size foamed polystyrene sheets (8 ft. by 4 ft. or even larger) the sheets being pinned to the face of the shuttering. This material can be cut or incised with a hot soldering iron or small diameter cup brush in the end of a power-drill. A 2 in. thickness of sheet is used where the design is to be incised, and a variety of incision obtained by using tools with different heads. Cut shapes can also be stuck to a thinner lining of polystyrene (using a special adhesive obtainable from the manufacturer of polystyrene sheet)—the latter can give a clean vertical edge as can the cup brush, whereas with the soldering-iron the incised line is irregular.

When the shuttering is struck the polystyrene remains in position and can be left as protection to the wall until the job is in the finishing stages. The shuttering itself comes clean from the polystyrene and can be immediately reused on normal work. The polystyrene can be removed from the wall face by either blow lamping or wire brushing—the latter technique is probably preferable. Although either, of course, means the loss of the polystyrene, this is of little account since the material is not expensive. The rugged concrete face that can be obtained in this way can be so rich in texture that it fully compensates for the dull and maybe patchy appearance of plain concrete straight from the mould.†

MOSAIC

There are two methods of working with small *tesserae*, direct in situ placing of the pieces into wet cement, or the assembly of the design upon sheets of paper (usually about 1 ft. square) numbered and laid into cement rendering. The nature of the first is slower in execution and must also be done by the artist himself; the result is usually much richer in textural effect as the *tesserae* can be varied constantly in angle and depth.

The more effective method of paper assembly, in which the design is spread on a horizontal working surface, enables an area to be made up to the designer's satisfaction before applying the gummed paper in units to the surface. One also sees the design the right way round in this method. Glass and ceramic mosaic may be mixed in one design. Ceramic is the cheaper and the colours when unglazed somewhat dull; glass *tesserae* are rich and glowing in colour. Grouting up the *tesserae* can be carried out by the artist or operative, its colour providing an important element in the general effect.

The cost of mosaic work can be reduced if conventional *tesserae* are replaced by cheap material such as cut or broken tile. The cost of labour can be reduced if the pieces are large rather than small. Using broken tile in this way, broad effects more in common with stained glass can be obtained and detailed interest produced by using tiles with differing degrees of gloss, or printed tiles. If an even surface is required thin tiles can be stuck to adhesive paper as in the mosaic method. To produce a more 'nuggety' effect, with more surface texture, the pieces can be applied direct to the wall using a suitable adhesive, or stuck with resin to prepared panels of such material as glass-fibre reinforced resin for screwing to the wall later. Fixed in either of the latter two ways, tiles of varying thickness can be used to produce a rich surface texture. Where resin is used, the tiles can simply be laid on the prepared panels in the required arrangement and resin poured round them. This forms a rigid fixing and grout can be dispensed with.

*The development of a tool for the extrusion of grout is the subject of a patent application by Mr. Anthony Hollaway.

†The use in this way of polystyrene sheet is the subject of a patent application by Mr. Anthony Hollaway.

CERAMIC

STANDARD MASS-PRODUCED TILES

Silk screen printed tiles

The printed mass-produced tile has the advantage and limitation of being necessarily simple, a basic unit with a design capable of a pattern the same unit size, or with one or more designs capable of being used in various positions to create larger units of pattern. Rich and decorative surfaces or purely repetitive ones are possible. Much depends on the sympathetic choice by the designer of the available patterns and colour.

Stencilled tile

An intermediate (one-off) technique between printed and hand-painted is the stencilled tile. Here the designers' work is intensive beforehand in the drawing up of the design and its breakdown into stencil units. Because the hire of manufacturer's workshop space and firing is often expensive, extremely rapid execution must be achieved by careful planning. The tiles in biscuit state are laid out horizontally, the stencil shapes placed and pigment applied by roller or brush and the tiles fired.

Glazes and pigments applied by the artist

Various traditional techniques can be used. By the nature of the medium much depends upon the character of the clay used, the temperature of fixing and the experience of the ceramicist in the control of these factors. Colours are often different in tone and sometimes in hue for instance before and after firing.

Under-glaze: Metal oxides in powder form are mixed with water and the pigment painted on to a once-fired (biscuit) tile. It is also possible to draw and paint designs on to a biscuit tile dipped in white or coloured glaze, which forms a working surface very similar to blotting paper. In both cases a clear glaze is then applied and the tile fired.

On glaze: On to a shiny white tile (or other colour) already twice fired, once to biscuit state, dipped in glaze and re-fired, pigments of the same kind are applied only with a different medium to make them adhere to the shiny surface, and then fired again. What you can do with these techniques is of course endless; a pigment may be brushed, sprayed or the surface scratched or scored, the glaze clear or translucent; one, several or all techniques may be combined.

Larger ceramic units in relief

Coarse clay with 'grog' (a mixture of clay and powdered fired fragments) to give strength, low shrinkage and high firing (if for exterior use) is modelled up to a profile of 2 in. Units of approximately 2 ft. by 1 ft. can be made to add up to larger units. A factor in the working of units this size is the control of warping, but for what is essentially a non-mechanical rugged surface, slight differences in level are readily acceptable on forms that are themselves modelled. These can be decorated with glazes and pigments and can be fixed according to site requirements by cementing, or counter-sunk holes.

PLASTER AND RENDERING

Sgraffito

Sgraffito is a traditional technique still capable of application to present-day needs. It demands, like

incised rendering, speedy and agile execution, but whereas render tends to have a stencil-like character, that of sgraffito is more refined and calligraphic. The wall is cement rendered to unify the surface. On to this a coat of matured slaked lime plaster $\frac{3}{8}$ in. thick is laid; the following day a $\frac{1}{16}$ in. coat of a different colour is laid. This is worked into whilst green, the incision of various tools cutting through the top coat and partially into the base coat, which is also still green. Different rates of drying can occur if the wall has different materials such as brick and concrete. This describes a two-colour sgraffito, but a design need not be limited to only two colours or two layers.

Incised rendering

This technique involves a plasterer's skill in the even application of rendering, and thus calls for a joint operation between the artist and the plasterer unless the artist happens himself to possess this skill. The wall is rendered in two $\frac{3}{8}$ in. coats of a suitable mix of cement, lime and sand, the first coat being allowed to dry out before application of the second coat in the normal manner. As soon as the top coat is on and while it is still green, sections of the top coat are removed with a trowel, revealing the face of the undercoat and producing a bas relief on two planes. Alternatively, the trowel can be used to produce a linear incision like that of a lino-cutting tool.

If the wall is to remain unpainted, a subtle difference in tone can be obtained by varying the sand from base coat to top coat; if it is to be painted, the pattern can be easily picked out in two colours without any time-consuming cutting-in, by brushing in the base colour to the incised faces and lower planes, and then using a roller on the upper plane. This method can also be used, of course, in normal maintenance repainting without demanding any out-of-the-way skill from the operative. Even the original colours of the design can be changed without difficulty.

This technique involves pretty rapid work by the artist, since the rendering only remains workable for a few hours and goes off more quickly still if exposed to hot sun, so that large areas must be worked in panels or avoided unless the artist can work very fast indeed. Nerve is also required since the design cannot easily be sketched out on the surface, and every stroke of the trowel is utterly irrevocable.

Routed and filled fibrous plaster

Experimenting with polyester resin and plaster of paris, it was found that a coat of resin appeared to be partially absorbed into the surface of the plaster, giving a hard abrasion-proof surface. This suggested that fibrous plaster panels, finished in this way, might be suitable in areas of hard wear such as entrance halls to blocks of flats. The design is first cut into the face of the prepared fibrous plaster panels by a high-speed router, the recesses filled with pigmented resin and the whole sanded down flat. The whole panel is then sealed with a full coat of clear resin.

This technique has one or two difficulties. First, the routing operation fills the air with a fine powder which makes working difficult. Second, the degree of absorption of the resin into the plaster surface appears to vary in practice so that certain areas get inadequate protection against abrasion and water penetration. Lastly, the clear coating is slightly yellow and this is particularly noticeable against a dead white plaster.

Precast plaster panels poured on sand

One of the walls of the Olivetti showroom in New York (design by the Italian architects Belgiojoso, Peressutti and Rogers) was covered with a rich bas-relief in sand-faced plaster by Constantino Nivola. Peressutti's story of how this technique was discovered may be apocryphal, but is worth repeating. Le Corbusier was staying with Nivola at the seaside. One morning the two men went out for a walk along the sand at low tide and, fascinated by the smooth surface, Corbusier began to draw vigorously with a stick. The drawing was a masterpiece and Nivola was appalled by the thought that it would soon be blotted out by the rising tide. Dashing back to his house he returned with a sack of plaster of paris and, applying this to the surface, he was able to preserve for all time a reverse image of the drawing on the sand. A thin film of sand adhered to the surface of the plaster cast, however, giving it a rich, crusty and colourful appearance. Nivola began thinking. . . .

The character of the surface is determined by the coarseness or otherwise of the sand—a fine foundry sand, for instance, can give fine detail and an interesting reddish ochre colour, but is inclined to dust off—a larger aggregate adhering better.

A large mural can prefabricated in sections using lath or wire reinforcement to the plaster—as in fibrous plaster work. Sand beds in frames could in fact be prepared by an artist for casting on by a fibrous plaster sub-contractor with very little extra material cost over that of normal fibrous plaster work—the completed panels being screwed or stuck with plaster dabs to the wall.

TIMBER

Routed chipboard

Standard panels of chipboard are incised with a high-speed portable router, using cutters of different diameters to form a linear design of different widths of line and depth of cut. The router forms a clean square cut recess into which pigmented polyester resin is poured, the colours and opacities of the colours being varied and mixed during the process. When the resin is set the whole surface is sanded flat and a protective coat of clean resin is applied. If a certain amount of clear resin or transparent colour is used in combination with opaque colour the quality of the natural flow of the material is preserved in the finished result. Together with the cut section of the board, revealed under varying depths of resin, this gives variety and interest when inspected at close range. Since chipboard is highly susceptible to moisture movement, the edges and back need sealing with resin or a suitable sealer. The finished panels are most simply fixed by screwing to battens, and the surface has proved itself in practice to stand up to the heaviest wear.

Wood mosaic

Sections of hardwood of different colour and profile are sliced up to a uniform thickness and stuck down to a series of baseboards to form the design. Polyester resin suitably pigmented to contrast with the colour of the hardwood is then poured over the boards, each of which is fitted with an edging trim to retain the resin to a depth slightly greater than that of the hardwood sections. When set, the boards are sanded to expose the face of the hardwood sections and the whole given a protective coat of clear resin. The completed panels can be fixed in the same way as the routed chipboard, and once again provide a permanent and extremely durable finish.

PAINTING

Fresco

Of all mural techniques fresco is the one with the longest history, stretching back to the Roman and Byzantine Empires. This is a highly skilled craft with many specialist variations, and is essentially a painter's medium. A fresh coat of lime and sand is each day laid on to a mortar base, only such an area as can be worked in the day is prepared and if not completed must be cut away, for when dry it will be unworkable. Only certain pigments are chemically sound (mainly the earth colours), and these are painted on to the wet lime and become integrated into the surface, the texture of which can be made marble-smooth or rough and gritty by the control of the mixture and trowelling. Experienced judgment and continuous work on the site is therefore essential to create a unity of surface finish and integrated design, for there is no going back on yesterday's work. The moves must be carefully planned beforehand; this is no hit or miss technique. These conditions do not seem to have deterred many modern artists, notably those in Mexico, from using the medium.

Direct painting

For painting direct on to plaster walls or other base, asbestos, hardboard, etc. normally a smooth finish is required with two coats of flat white paint to provide brilliance if transparency is desired. Most painters and architects prefer a matt finish to a painted mural, and this can be achieved by using wax colours, standard manufacturers' flat oil colours, artist's oil with a wax medium or emulsion paint. By painting direct on site a successfully painted mural achieves a unity with the wall in its way unique. Its other characteristics are immediacy and mobility which allows addition and subtraction until completion. It is by nature a 'thinking' medium, the 'gesture' remains clear throughout the work from start to finish. Not enough developed is the possibility of formal designs using standard colours (or, where a programme may allow, a range of particular character drawn up for the work in hand). Wall and ceiling areas of modular units can be painted on or off site, by operatives or artist according to the nature and complexity of the work. Logically it is just those buildings based on a modular system, which may tend towards a rigid or mathematical expression, in which a free and imaginative use of colour is needed.

Time involved here is often the mixing of paints; if this can be done beforehand either by use of British Standard or manufacturers' ranges for special jobs, execution can be very rapid, the character of the work being not so much individual brush strokes as the play of areas of colour one against the other.

PAPER

As a variation upon ordinary wallpaper with its repetitive character, paper can be used to provide the units of a modular design. By the use of a printing method such as silk screen, one can produce any number of a 'mural.' For this one merely needs a unit size convenient for printing (though it can be quite large; screens can be 8 ft. by 4 ft.). You then also have the components of a mural 'kit' so to speak; variations of a design can be achieved by different combinations, or one mural replaced on the same site by another merely by re-assembly. As with any paper or fabric, different 'colour-ways' of the same design units can be printed, thereby changing the mood and character of the design. It is also clear that screen printing could be applied to materials other than paper.

SYNTHETIC RESIN

Pigmented polyester resin, when poured on or brush-applied, sets with a high gloss finish, and since the film has a far greater thickness than that of conventional paint the surface is apt to be uneven. A flat, matt finish can be obtained without sanding by mixing a fine sand with the resin and pouring or painting in reverse on a flat smooth surface treated if necessary with a release agent. A back-up coat of resin alone will produce sufficient rigidity for small panels, although the addition of glass fibre to this coat as reinforcement would be necessary for large panels.*

*The use of synthetic resin in this way is the subject of a patent application by Mr. William Mitchell.

MEXICAN NEWSLETTER

Irene Nicholson

Modern Mexico is a happy hunting ground for architects. Contracts for private homes, office buildings, cinemas, factories, housing estates, tumble into their laps—typical recent examples are 1 to 3 alongside. There are whole new cities to be planned according to every architect's dream, from scratch, for the country is in the midst of an industrial revolution. It is booming, yet with vast areas still undeveloped. In the circumstances, Mexico inevitably has its share of inadequately planned, ill-designed and weakly constructed buildings, and there are plenty of examples of bad manners in architecture, of new buildings that jostle colonial masterpieces or shout their quieter contemporaries out of existence. The Mexican architect has to face the problem of integrating several cultures that stand side by side or are superimposed on one another. Mario Pani, for instance, is at the moment redesigning and adding modern buildings to a square, 4 which contains the foundations of an ancient pyramid and an early colonial church, both of which are historic monuments. Ricardo de Robina has been emptying churches of tasteless nineteenth-century images and replacing them with simply designed modern altars, lecterns and crucifixes, 5.

From shortly after the Mexican Independence, say from about 1830 until well into the twentieth century, Mexico suffered years that were architecturally barren, producing largely pseudo-Moorish, pseudo-renaissance, pseudo-gothic. The results are to be seen in almost every main street in Mexico, and neglect of many minor colonial buildings makes matters still worse. The contrast between the well-kept and finely proportioned National Palace and many equally good but now bedraggled buildings round about, tells its own sad story. But the architectural conscience is reawakening as Mexico City grows and is rebuilt. The younger generation is groping toward a style that shall be in direct line from the best traditions of ancient and colonial days, that shall be genuinely modern and also genuinely Mexican. There have been some brave failures, but 'even our absurdities are absurd in a Mexican way,' says Mario Pani.

What will be the special Mexican contribution to modern architecture? There are obvious influences from Le Corbusier, Frank Lloyd Wright and the rest. Nevertheless, as one studies the latest buildings one glimpses certain tendencies emerging. Foremost is the need for excessive simplicity and budget-paring in all kinds of popular housing, including working-class blocks, 6, schools and many Government institutions such as Social Security and medical centres. Superimposed on the simplicity there is a tendency to highly decorative baroque. Baroque may be regarded in

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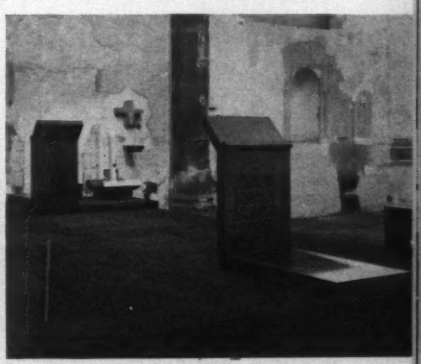

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1, *a typical house in a Mexico City suburb, Jardines del Pedregal; architect, Carlos Reyes Navarro.* 2, *storage warehouses of a fertilizer plant in Monclova, north Mexico; architect, Ricardo de Robina.* 3, *one of Mexico City's newest cinemas; architect, Juan Sordo Madaleno.*

4, *the new Central Mexico City police station (architect, Enrique Castañeda Tamborrel) providing a new background to an old square.* 5, *lecterns, crosses and candle holders in the cathedral of Cuernavaca, restored and refitted by Ricardo de Robina.*

MEXICAN NEWSLETTER

Mexico as a historical necessity, certainly from the sixteenth century, and even—if one may be allowed an anachronism—from preconquest times. Nothing could be more in the baroque spirit than the Teotihuacán carved friezes of the gods of wind and rain, or the elaborate low reliefs of Palenque and Bonampak. Nothing is more baroque today than the facades of modern 'matchbox' buildings, covered every inch with feathered serpents and the symbols of independence and revolution. Almost always, though, there is underlying simplicity. On the whole Mexicans are blessed with an eye for proportion. Simplicity has salvaged their extremest styles from decadence, as in the churrigueresque of Tepozotlán and Tonantzintla.

Sheer weight has also been a characteristic of Mexican architecture in the past. Even the pyramids, especially those of Tajin, are really conceived horizontally. Now many tall, narrow office blocks, such as 7, are planned as horizontal designs of coloured tiles or mosaic alternating with unbroken windows. Here we meet another characteristic: the use of local materials—stones, woods, and locally fired tiles—to give texture and colour. Concrete surfaces are often unfaced, or stones left roughly quarried to give a tactile intimacy, as in 8. Colour and texture are used for touches of humour that are very Mexican, with motifs taken from folk art—for example the fountain sculpture in 9.

In private houses, even in apartments and office buildings, the threshold from indoors to out is often blurred. In the tropics and semi-tropics, living rooms may lack a fourth wall, 10, but on the cold high plateau it is necessary to put glass even though it may be in the form of a sliding door that can be left open during the day. The Moorish-Spanish habit of turning houses inward on to patios, leaving the outer walls windowless, allows maximum planning within an enclosed miniature fortress. This inward-turning is a hangover from the days when each social class and each race in Mexico lived apart, when 'to go into the street' was an adventure beset with dangers, real or imaginary. Today it serves the purpose of insulating from the noise and brashness of the outer world.

The period of pseudo-architecture may be said to have ended in Mexico about 1925, when José Villagrán Garcia began to build clean, functional hospitals and dispensaries that look up-to-date even today. Villagrán taught most of the architects now working, and though some have broken into hidden or open rebellion, nearly all show signs of his influence. He recently became the first architect to be received into an exclusive body, the Colegio Nacional, whose membership is limited to twenty. At his investiture he attacked many modern tendencies. He deprecated the seeking after originality. Though he called for sounder techniques, he deplored a tendency to deny artistic and plastic validity to architecture. He asked for a more careful consideration of a country's requirements—social, climatic, psychological and historic. 'Form,' he says, 'is no longer sought as the expression of a solution to a given problem. An uncreative neo-classicism has developed.' He dislikes the tendency to unbroken lines of windows regardless of the climate or of the need for privacy.

Although Villagrán's views are not necessarily shared by his pupils, it is no coincidence that the foremost architects, if questioned, speak first in terms of philosophy, economics, sociology, and only as a corollary of engineering, of materials and of style in its narrowest sense. This is true even of the acutely intelligent Félix Candela, the engineer famous for his shell concrete vaulting.

Mario Pani, for instance, is at present redesigning an overcrowded slum belt of Mexico City, Nonoalco. He is taking advantage of a space left by an abandoned railway goods yard to plan a self-contained unit into which slum families from the immediate neighbourhood will be shifted. A new space will thus be left, which will be built up in its turn. He believes that he can provide much better than minimum housing by increasing the density of population, by creating a residential district close to the factories and work centres, and by calculating rents in such a way that the richer families and the shop and factory owners shall subsidize the poorest strata. He has had to make a complete social survey of the habits, incomes and general conditions in the area.

Another example is the new 'Labour City' being built by Ricardo de Robina on waste land expropriated by the State. Financing is by private industrial concerns who are fulfilling a law that has often gone by default, whereby companies over a certain size must provide housing for their employees. Equally interesting are the peasant housing schemes of the National Housing Institute under the direction of Félix Sánchez. In one scheme the peasants are being taught to make their own bricks and do their own building. There is also the prefabricated schoolhouse-plus-teacher's home which has been designed by the Ministry of Education and was exhibited last year at the

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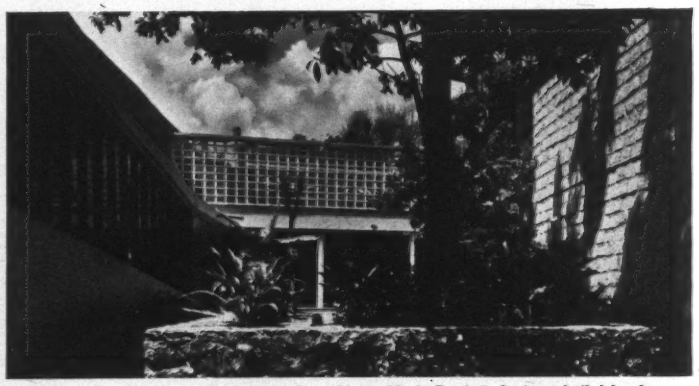

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6, working-class housing with playground; architect, Mario Pani. 7, horizontal tiled bands on an office block; architect, Enrique del Moral. 8, courtyard entrance to a house with rough lavastone walls; architect, Augusto H. Alvarez. 9, humour expressed in fountain sculpture, and gaiety in brick design on the wall of the largest Mexico City market, 'La Merced'; architect, Enrique del Moral.

Milan Triennale.* The structural frame and the furnishings are provided, and individual touches are added by using materials handy in each locality.

New and sanitary markets, 11, of which del Moral and Villagrán are the chief designers, have been modelled to conform with the traditional peasant layout of meat, fruit, vegetables and flowers. Narrow streets roofed over with corrugated iron have been replaced by units that include all hygienic facilities and even playrooms for the vendors' children. Speed of construction is important in such a fast-growing country, and a very beautiful little factory was recently erected in a record 121 days. It is for making fruit-juice and other cartons, and is fitted with plastic screens framed in aluminium to protect against afternoon sun. The offices have mahogany fittings and smoothly swinging doors hung on vertical pins placed several inches inward from the jamb. The architect is Fernando Barbará Zetina, one of the most promising of the younger generation. He has been influenced by Japanese styles and is elegant in his use both of colour and surface texture. A still more startling example of speed is the modernizing and rebuilding of the Pacific port of Manzanillo which was hit by a cyclone in October, 1959. Since then, earthworks, a housing estate, and a civic centre have been erected.

Slightly apart from the general run of work now being done in Mexico are the structural experiments of the Candela-de la Mora partnership. This partnership built the Mexican stock exchange, 12, a vaulted building naturally lit by almost concealed windows. Enrique de la Mora, together with Leonardo Zeevaert and Alberto González Pozo, is engaged on a new experiment, an office building, 13, whose main weight is taken from above. Two hollow concrete shafts reach from the ground to seventh floor, where they support two enormous longitudinal concrete beams. These in turn support transverse armatures on which the building is 'hung.' The method is intended to give maximum flexibility of space. De la Mora, Candela, and Fernando López Carmona have built a series of churches and chapels using hyperbolic-paraboloid surfaces that give sometimes gentle, sometimes steeply upward-flowing lines, 14. Some Mexican architects have criticized what they call an exaggerated pointedness, with loss of emphasis on the altar. Villagrán, together with a young collaborator, Raúl Gutiérrez, and an artist, Federico Cantú, has built a seminary chapel in direct contrast, the prevailing lines being horizontal and massive, 15. Hollow concrete bricks have been faced at one end with coloured glass which reflects on to the inner surfaces of the bricks.

* A.R., November, 1960.

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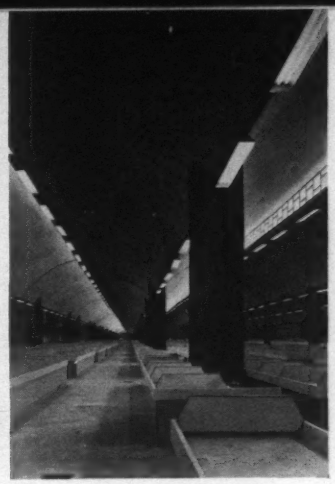

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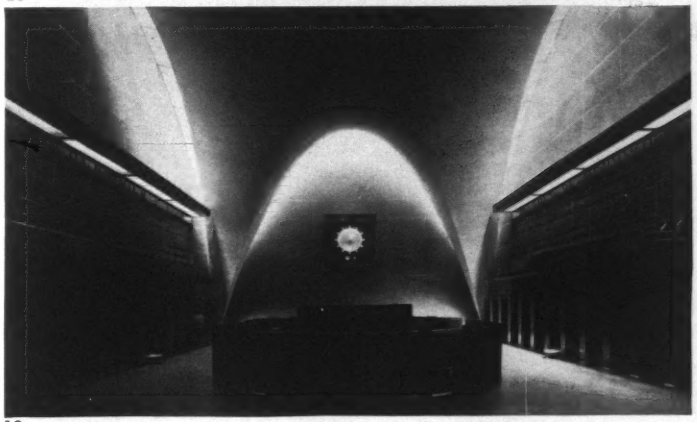
10, *looking from a house on to its terrace and garden; architect for all three, Enrique del Moral.* 11, *interior of the enormous 'Merced' market, Mexico City; architect, Enrique del Moral.*



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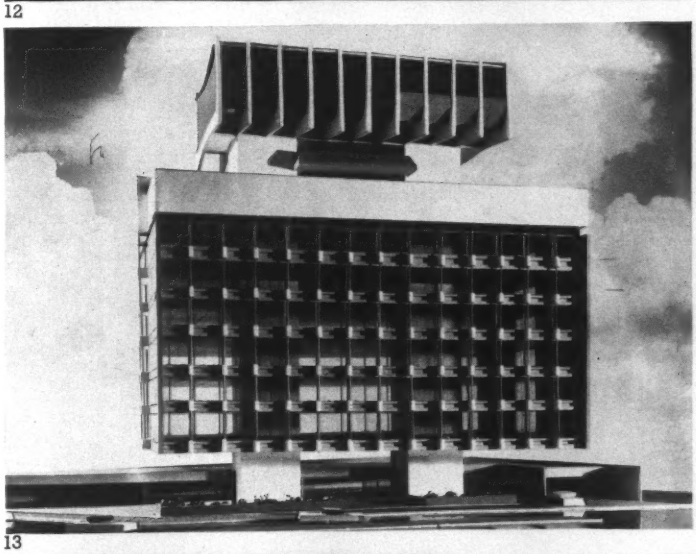
12, *the Stock Exchange, Mexico City; architects, Felix Candela and Enrique de la Mora.* 13, *model of the projected 'Monterrey' building in Mexico City by Enrique de la Mora, Leonardo Zeevaert and Alberto Gonzalez Pozo, showing the hollow columns and the armatures from which the building is 'hung.'*



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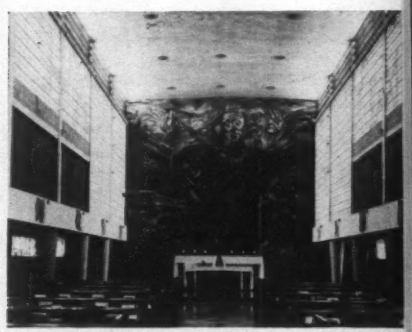

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14 (*below*), *Chapel of the Missionaries of the Holy Spirit, Mexico City, showing the rhombus of the roof, the cross incorporated into the structure, and the lava-rock walls; architects, Enrique de la Mora, Felix Candela and Fernando López Carmona.* 15, *seminarists' chapel by José Villagrán García and Raúl Gutiérrez, with mural and glass-and-brick mosaic by Federico Cantú.*

14

1
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criticism

J. M. Richards

Stockholm's new commercial centre

Town-planners: Sven Markelius
Göran Sidenbladh

Architects: David Helldén
Anders Tengbom
Sven Markelius
Lars-Erik Lallerstedt
Sven Backström
Leif Reinius

Serenity rather than drama, evolution rather than revolution, are what one expects in Stockholm, yet the commercial centre of that city has, during the last seven years, undergone a more dramatic revolution than that of probably any big city in Europe—certainly than any city not inspired to reconstruct by war-damage. It is acquiring a new architectural character, new principles of traffic engineering are being introduced and Lower Norrmalm—the business area that runs north from the waterfront, of which the reconstruction area is part—is being given a new silhouette.

Five 18-storey office-blocks built in parallel formation south of the old Hötorget—the ancient haymarket which since 1926 has been the forecourt of Ivar Tengbom's neo-classical concert-hall—are the focal point of the scheme, and they are the subject of this article together with the terraces, promenades, roadworks and pedestrian bridges that surround them. Though only two of the five blocks are so far occupied, the scheme is now finished enough for its quality to be judged. Architecturally—subject to a few reservations I shall come to later—it is well conceived, and executed with unusual assurance and precision. Urbanistically it will certainly prove, when the whole scheme is complete in 1964, a model instance of the reorganization of a city centre to meet modern needs. For, apart from the changes it is bringing to Stockholm, it is highly significant because of the way it tackles simultaneously a great many of the problems that architects and town-planners are having to face in other cities all over the world. Among these are traffic problems (the separation of pedestrians and vehicles; parking; delivery access to commercial buildings), problems of architectural control and cohesion (how to persuade property developers to sponsor good architecture and to relate the development of one site to the next) and several aesthetic problems of some topical significance, including the relationship—particularly in scale—of new buildings to old and the relationship to architecture of illuminated and other advertisements.

Before I go on to discuss the scheme I should say something about its origin, because this again has lessons for city-planners. The scheme really began in 1952, when Sven Markelius was director of planning for Stockholm and completed the preparation of a master-plan for the city. One element in the plan was an extension of the underground railway across Lower Norrmalm, which involved a great deal of excavation and demolition of property, since the railway is near the surface and is constructed by digging trenches and afterwards roofing them over—not, as in the London tube, by boring tunnels. Markelius made this the opportunity for some radical redevelopment, including a redevelopment of the traffic system that should do much to enable Stockholm to resolve the conflict that bedevils every modern city, between civilized life in a busy centre and the free movement of vehicles.

Markelius's views about city traffic are clearly given in an article he wrote soon afterwards in *Byggmästaren*:* 'It is clear,

Facing page: 1, *the whole scheme from the east, showing the five office-blocks in different stages of construction (the two on the right, by Anders Tengbom and David Helldén, are finished). In the foreground is Sveavägen (see plan on page* 106*), passing under the high-level road that crosses between the last two blocks. On the far left is the site of the new multi-level traffic intersection, Sergels Torg.* 2, *looking down from the first office-block showing the pedestrian spaces and roof terraces between the blocks.*

* *Byggmästaren*, March 1956: The Structure of the Town of Stockholm, by Sven Markelius.

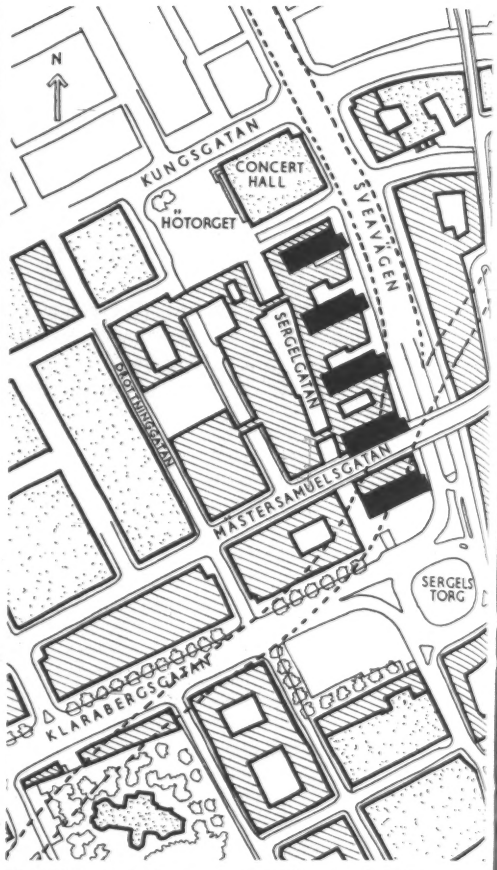
according to present traffic forecasts, that it would be impossible to cope with all the traffic which would appear if it were allowed to develop freely. It is a matter, therefore, of maintaining a balance between two equally important objects: to cope with motor traffic and to preserve the business concentration in the area. An essential condition for this is that private motoring, less vital to the functioning of the area than goods traffic and public transport, must to a certain extent be kept outside the inner city area and served by parking facilities set up on the periphery. If any further expansion of the city area can be halted and if public transport—tube, bus and tramlines—is sufficiently extended, the internal traffic in the city will function satisfactorily even with this limitation. To a large extent, this will be a matter of pedestrian traffic . . . where the pedestrian lanes and footpaths have acquired a convenient form, pleasantly protected from wind and weather, where they offer variety, comfort and freedon from intersecting traffic, people will readily walk short distances and perhaps gain time by so doing.'

Markelius's plan for central Stockholm follows this principle, and the key area is the one I am concerned with here. It lies between four main streets: Drottninggatan on the west, Sveavägen on the east, Kungsgatan (together with the old Hötorget) on the north and two streets now being reconstructed on the south: Klarabergsgatan and Hamngatan. Where these two meet a large two-level intersection—to be called Sergels Torg—is being created, containing an underground station reached from a sunken shopping piazza. Throughout the whole area multi-level planning is the method used to separate different kinds of traffic.

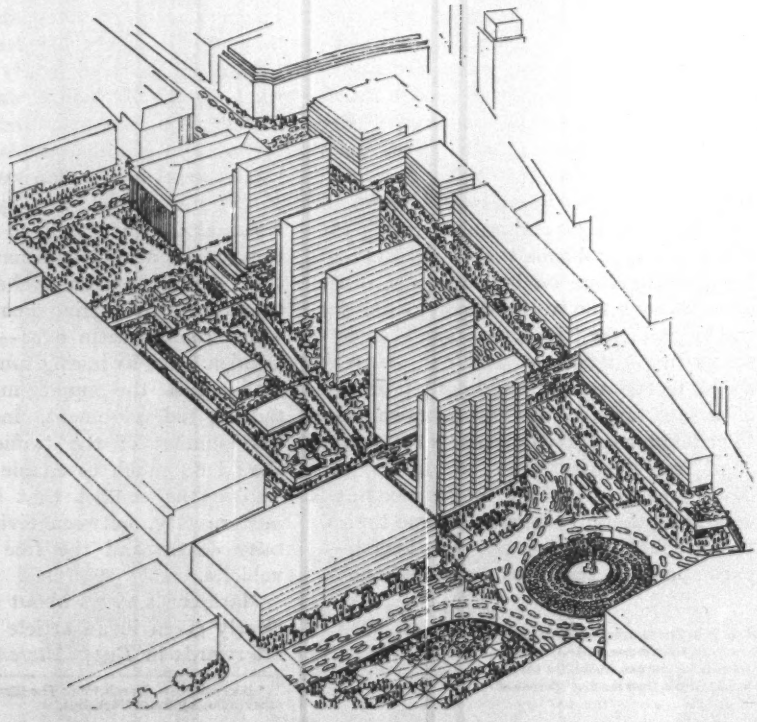
Such radical replanning as the area has been subjected to demanded of course central control over land-use and the possibility of dealing with large areas at a time. Much credit is due to the Stockholm city authorities who had the foresight to begin, as long as fifty years ago, to acquire land in the city and who now own a high proportion of the central sites. The process of acquiring these was facilitated by two further factors: one was the passing in 1954 of the so-called *lex Norrmalm*, which allowed the city to purchase land compulsorily without first submitting a detailed plan for its future use, as the law required previously. This prevented key sites having to be bought at an inflated value. The other helpful factor was that, in the area which is being totally rebuilt between the main streets I have already named, nearly all the property dated from the nineteenth century and was in varying degrees obsolete; its valuation was therefore comparatively low.

In the nine years since this scheme was conceived it has proceeded steadily, with surprisingly few amendments to the original plan, under the direction of Göran Sidenbladh, who succeeded Markelius.* It has involved the clearance of 55 separate sites, containing 180 shops, 480 dwellings and about 225,000 square feet of office floor-space, as well as a church, three schools and other buildings. Evicted residents have been rehoused through the official housing agency, and businesses that wished to remain in the area have been temporarily accommodated, pending the completion of the new buildings, either in other property owned by the city or in special evacuation buildings on the edge of the area (partly in Klarabergsgatan and partly in Sveavägen) which were erected for this purpose as the initial instalment of the scheme. It is worth noting that although the central buildings consist of 18-storey skyscrapers—a height almost unprecedented in Stockholm—there is no great increase in building volume. The scheme is an excellent illustration of the principle that the value of building high is that it frees space lower down. Traffic capacity has been doubled and the circulation space for vehicles and pedestrians has been trebled. If parking space is included it has been quadrupled.

I have given some attention to all these preliminaries, although my purpose is a critical evaluation of the final result, because such logistical and administrative planning is an essential part of the whole operation of rebuilding a central area, and

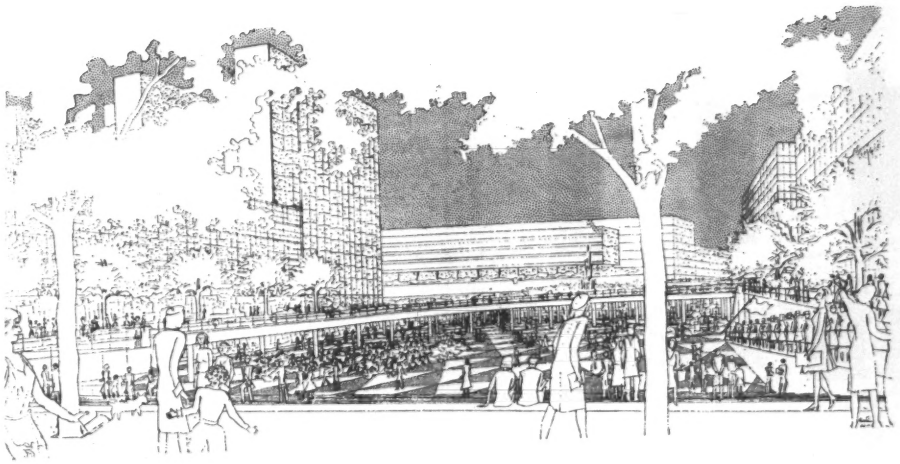


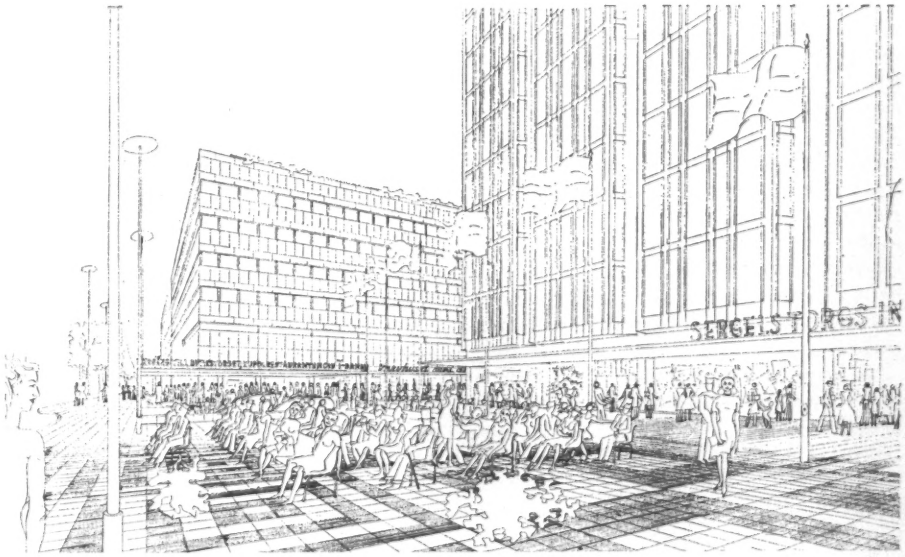
Plan of the reconstruction area in Lower Norrmalm, the business centre of Stockholm. The dotted line shows the extension of the underground railway. The five new office blocks are in black.

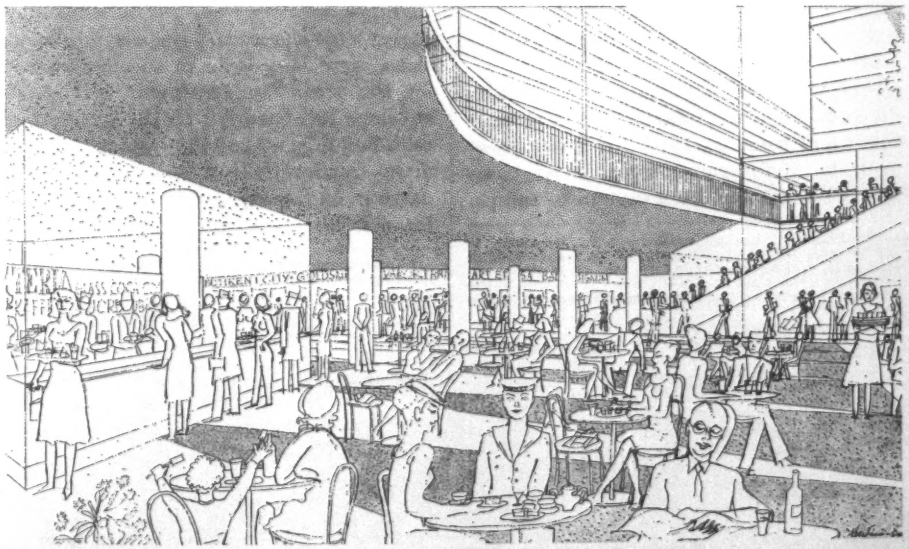


Bird's eye view of the new commercial centre of Stockholm as it will be when the five tall office blocks (the subject of this article) and the new traffic intersection, Sergels Torg, are complete. Sergels Torg is shown at bottom right; at top left is Ivar Tengbom's concert-hall, fronting on to Hötorget.

* There was, however, a change of status which is of some interest. Markelius, while employed in preparing the master-plan, remained a private architect, but on his retirement Sidenbladh was given an official post in the city-planning office, the status of which was raised vis-a-vis his administrative colleagues to give him wide executive powers. His job is now comparable to that of the architect to the London County Council in the latter's planning capacity.





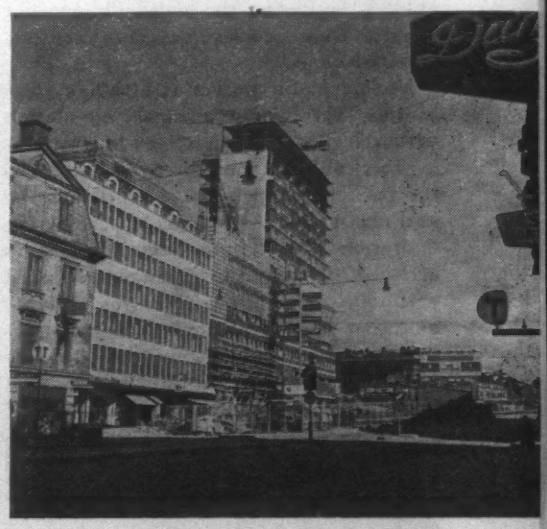


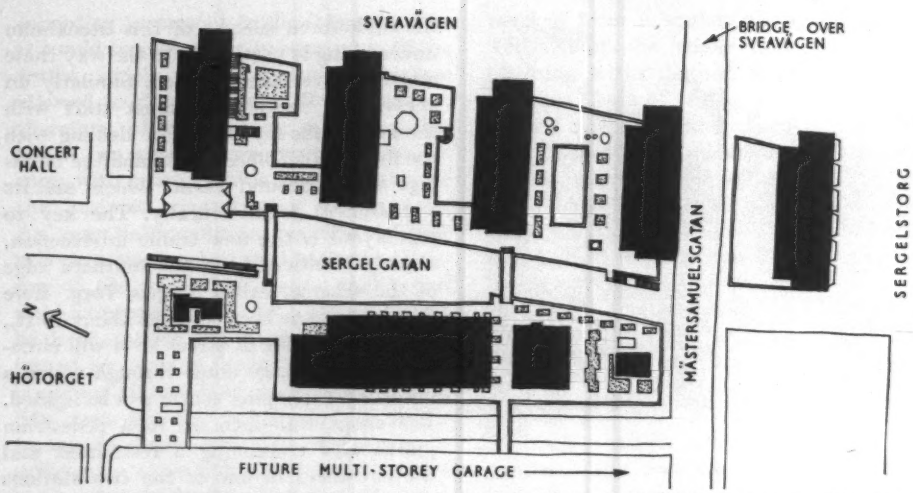
Above, three drawings showing the new traffic intersection, Sergels Torg, south of the new commercial centre, as it will be when completed—see street-plan opposite. Top, from the southern end of Drottninggatan, looking into the sunk shopping piazza, with the eighteen-storey office-blocks on the left. Centre, from the lower level, with the southernmost of the five office-blocks on the right, the main level being reached from here by escalators. Bottom, café beneath the roof of the partly covered low-level piazza

the undoubted success of this Stockholm undertaking is partly due to the way these matters have been handled. Similarly an analysis of the scheme must start with the new traffic layout, before dealing with the five parallel office-blocks and the buildings that surround them, which are its embodiment architecturally. The key to this layout is the new traffic intersection, already mentioned, on the southern edge of the scheme, called Sergels Torg. Here the ground has been lowered about 15 ft., and motor-traffic at street-level will circulate round a large dome through which a lower-level shopping centre will be lighted. The shops will open on to a pedestrian piazza also containing a restaurant and the entrances to one of the two stations on the new extension of the underground railway. The piazza will be connected to street level by some fifteen escalators at various points.

The Sergels Torg intersection will be the last part of this reconstruction scheme to be completed—some three years hence. The other new traffic systems and separations of level involved in the scheme are in operation and are already proving successful, not only as regards traffic flow but as regards the social and architectural coherence of a type of area that in many cities is being utterly disrupted by ad hoc attempts to cater for the needs of the motor-car. Along Sveavägen, the main traffic artery on the eastern side, southbound traffic is carried in a tunnel under Sergels Torg. The main east-west flow will be along Klarabergsgatan (which is being widened from 25 ft. to 118 ft.), leading into the Sergels Torg roundabout, and these two main roads will take some of the load off Kungsgatan and Drottninggatan—both busy shopping streets—which bound the reconstruction area on the other two sides. Within the area a widened Mäster Samuels-

Below, the site of Sergels Torg as it is now, with the partly built southernmost office block—photographed from Klarabergsgatan.





Plan showing the terraces, roof-gardens and bridges surrounding the bases of the five office-blocks and the two-storey buildings on the opposite (western) side of Sergelgatan, the new pedestrian avenue.

gatan, which runs parallel to Klarabergsgatan, will fly over Sveavägen and provide a link to the shopping area on its eastern side. To do this it will pass between the fourth and fifth of the office-blocks—see perspective, page 106.

Independent of this three-level traffic system (which connects with similar systems outside the area) is a pedestrian system, the main artery of which is Sergelgatan, based on a former street now closed to traffic. This pedestrian avenue runs southwards from the old Hötorget in front of the concert-hall and passes underneath Mäster Samuelsgatan. On one side of it is a group of new two-storey buildings—a theatre, shops, etc.—with roof gardens; on the other side are the five office-blocks surrounded by two-storey shops and pedestrian terraces, linked by footbridges over the paved spaces between each building. Bridges over Sergelgatan also connect with the roof-terraces of the two-storey buildings. These terraces and bridges form a complete high-level pedestrian circulation system giving access to upper-level shops and incorporating gardens, cafés and the like. Altogether, around the foot of the high buildings and reached from pedestrian spaces, are one hundred shops.

No such highly worked-out traffic system as this—involving multi-level circulation with vehicles and pedestrians separated—is practicable without careful attention to the parking problem, so a word must be said about this. As was made clear by the quotation above from Sven Markelius's article of 1956, his Stockholm plan is linked with a policy of discouraging private motoring in central areas and encouraging the use of public transport—a policy which the extension of the underground railway is of course designed to support.*

*When the underground extension is finished, the two new stations in this area, Hötorget and T-Centralen, will handle about 300,000 people a day. Between them they will have 15 exits, including one leading direct into the lower hall of one of the tall office-blocks, and another direct into the six-storey buildings on the eastern side of Sveavägen.

At present 75 per cent of the workers in shops and offices do in fact come by public transport. One weapon used by the city authorities to discourage private cars is that of charging high parking fees. The various public car-parks charge one kronor (about 1s. 5d.) per hour, but there is no reduction in the rate for all-day parking, which costs 8 kronor (nearly 12s.), so the luxury of bringing a car to work is an expensive one. Nevertheless there is need for considerable car-parking accommodation in a busy commercial area, and this is being provided immediately by a six-storey parking building (the first in Stockholm) with shops on the ground floor, holding 500 cars, on the edge of the area, and by parks for 700 cars in the lower basements of the office-blocks.† Privately financed parking garages, with room for another 1,200 cars, are planned nearby.

The five tall office-blocks have three basements, which extend also beneath part of the surrounding pedestrian and shopping areas. The upper basement provides storage space for the shops and loading and delivery arrangements, together with a filling and service station; the middle basement contains more storage space and some parking; the lower basement is all for car-parking. These basements are reached by a system of ramps, and delivery of goods to the shops is thus kept quite separate from the traffic circulation round the buildings.

†The normal planning requirement in Stockholm is parking-space for one car for every 200 sq. metres of office floor-space (which generally means one whole storey for parking for every eight storeys of offices), in addition to the usual provision for loading and unloading space within the area of the site.

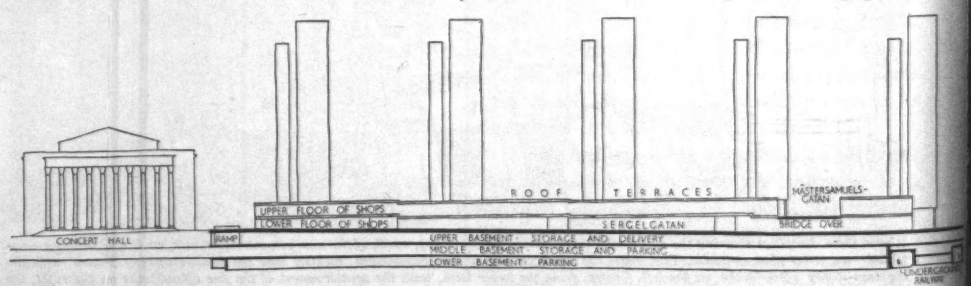
Above these three basements, the five towers are normally planned office blocks. They are equally spaced in parallel formation, and a criticism that might be made of them—and indeed has been made—is that they are a little too close together. According to accepted standards of spacing this is so, and whether there should not be four rather than five blocks in order to allow a wider spacing was, I believe, seriously considered when the plan was being made. There were several practical reasons, apart from the need for the maximum floor-space, why four blocks would not have been as good as five—it would have made the phasing of the long-term rebuilding scheme, and in particular the process of acquiring sites, more difficult—but the decision to build five was taken, I understand, largely on aesthetic grounds, and it was clearly the right decision; four blocks, more widely spaced, would have made a far less interesting group, and in practice the buildings do not suffer from being so close together. This is partly perhaps because their glazed wall surfaces reflect light downwards between them.

One small sacrifice however has had to be made: to make the space between them adequate, the thickness of each block has had to be kept down to 49 ft. in the case of the first to be built, and to a few inches over 50 ft. in the case of the others, whereas from the point of view of internal planning, a few feet more would have been ideal. But on visual grounds this is not to be regretted; the slimmer such slab-shaped blocks appear the better.

All five blocks (except for the small variation in width just mentioned) are identical in outline, with a parallel and slightly lower slab on the north-side of each.‡ This shape, and the overall dimensions, were laid down in the master-plan for the area. The treatment within this envelope has been left to the architect of each building; so has the treatment of the main facades (it was required that the narrow end façades should be blank except for staircase lighting) and the choice of

‡And without obtrusive lift motor-rooms on the roof. The lifts stop at the seventeenth floor.

[*continued on page* 113



Section looking east, showing the various basement levels.

STOCKHOLM'S NEW COMMERCIAL CENTRE

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3 (left), the new scale in central Stockholm: the two completed 18-storey office-blocks rising above the business area of the city. On the right is a corner of the roof of Ivar Tengbom's concert-hall of 1926, which faces on to the old Hötorget. This is the starting-point of the pedestrian avenue passing down the western side of the five office-blocks, shown in the four pictures below: 4, from Kungsgatan (see plan on page 106) with concert-hall on left, looking across Hötorget towards the two-level shops between which the new pedestrian avenue (Sergelgatan) passes; 5, a closer view—concert-hall, Hötorget and the entrance to Sergelgatan; 6, from the steps of the concert-hall, looking down Sergelgatan, showing a footbridge connecting the roof terraces on either side; 7, looking back beneath the same bridge towards Hötorget, with concert-hall on right and, in the distance, buildings on the far side of Kungsgatan.

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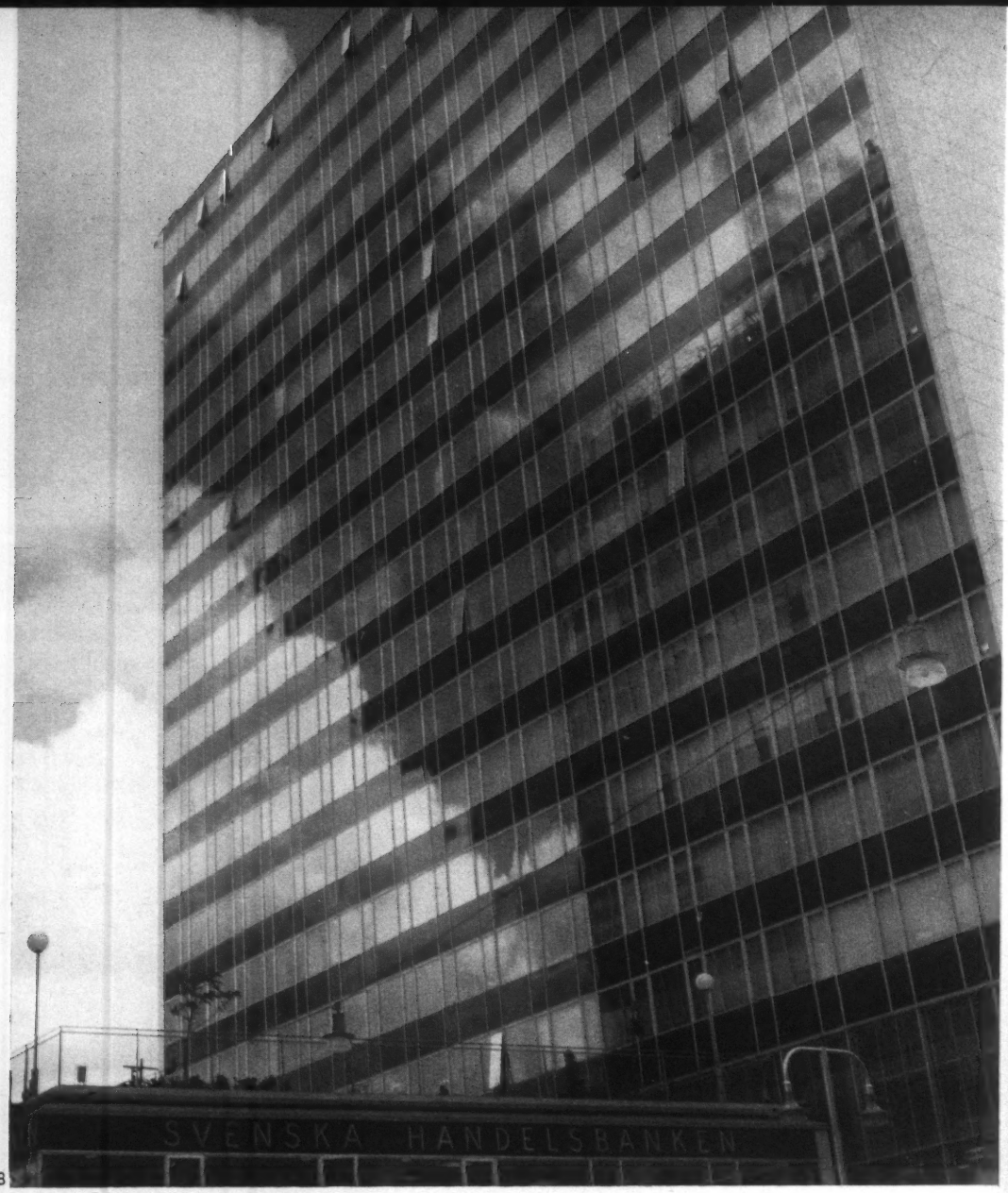

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8, the south facade of the first (northernmost) office-block—architect, David Helldén—showing also the roof garden on top of the two-storey shops at its base. Note the curtain-wall pattern with alternating large and small units horizontally. Only the small units open. Below (and continuing on the facing page), views in the pedestrian spaces, surrounded by two-storey shops, between and around the office-blocks.

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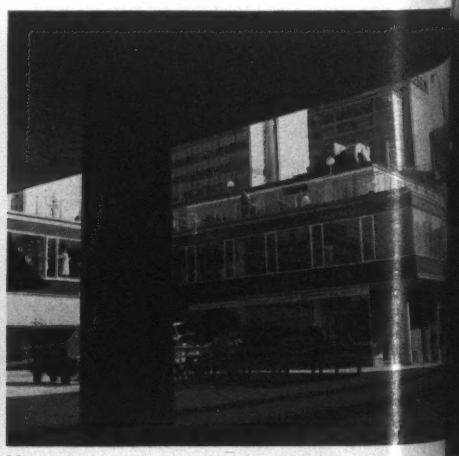

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14 (*above*), *the five blocks from the unfinished (southern) end. In the foreground is the site of the future multi-level traffic intersection, Sergels Torg. Left, pedestrian spaces between and around the office-blocks:* 9, *between the first and second blocks, looking from Sveavägen towards the pedestrian avenue, Sergelgatan;* 10, *looking back from Sergelgatan, showing bridge across it—first office-block beyond;* 11, *the far side of the shops on the western side of Sergelgatan;* 12, *between the second and third office-blocks, looking back towards Sveavägen and the spiral staircase giving access to the roof-terrace over the shops;* 13, *the north side of the first office-block, showing on right the ramp down to the basement garages.*

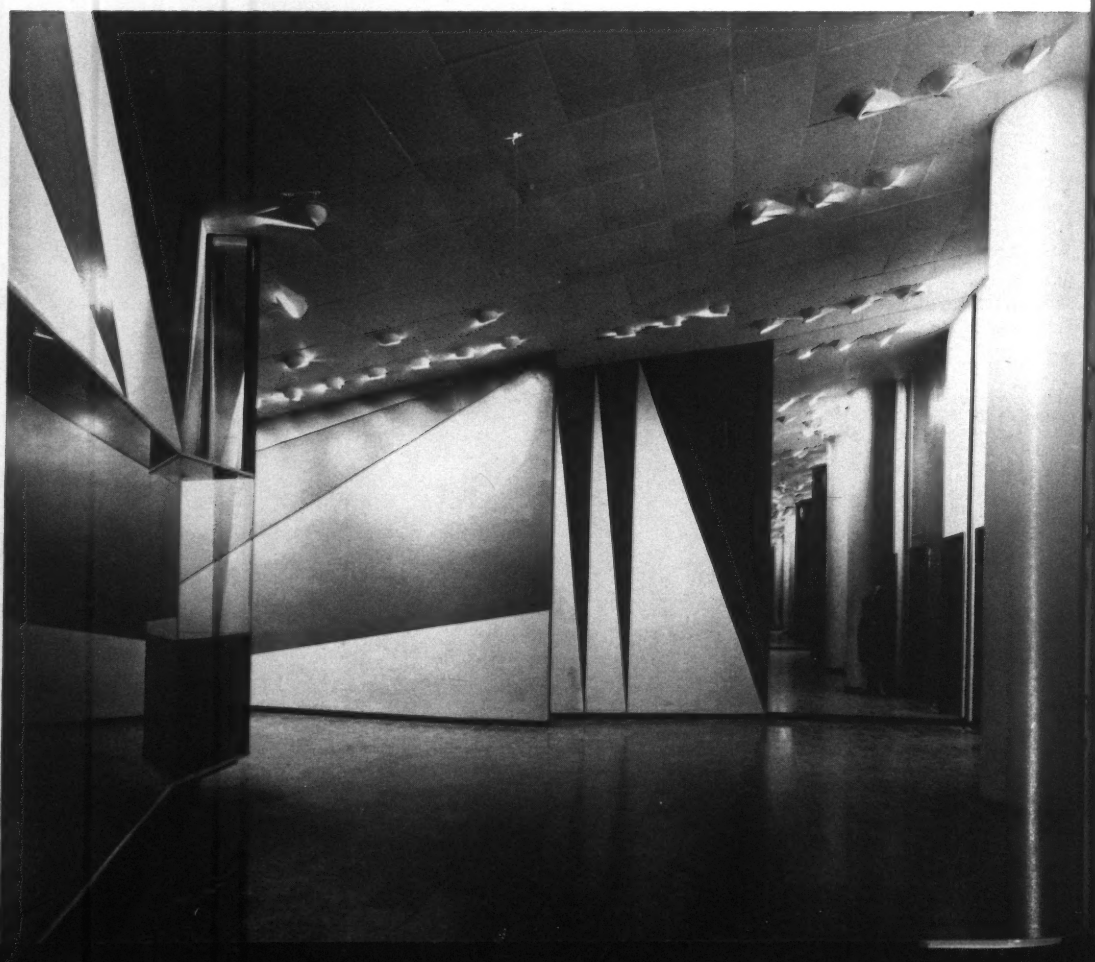
STOCKHOLM'S NEW COMMERCIAL CENTRE

15

16

17

15, *night view of two-storey shops at the foot of the first office-block (architect, David Helldén) —see also* 8, *page* 110. *In this case the bank on the right occupies the upper storey above the corner shop; wall-painting inside the bank by Carl Axel Persson.* 16, *shops at the corner of Hötorget and Sergelgatan (both for pedestrians only). The upper storeys of the shops are reached by the escalators on the right.* 17, *inside one of the two-storey shops.* 18, *inside the ground-level entrance hall of the first office-block. The wall paintings, in sharp tones of green, and red, exaggerating the perspective, are by Olle Baertling.*



18

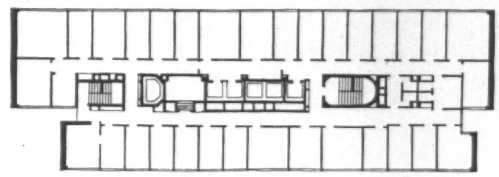
continued from page 108]

materials, subject in each case to approval by the city-planning office.

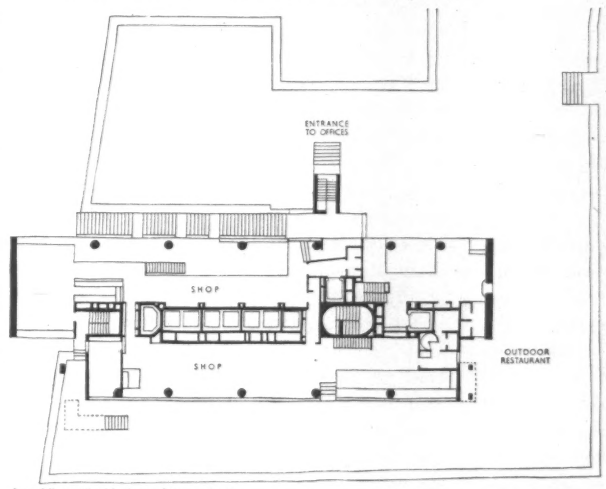
The city-planning office has thus no more and no less power to control building volume, and to give or withhold planning consent on grounds of design, than the architect's department at the London County Council, and it is perhaps instructive to compare the remarkable consistency of character and architectural quality achieved in this Stockholm scheme with what one would expect in a similar scheme in London. For the area is being redeveloped, as it would be in London (comparable sites are, I suppose, Piccadilly Circus or the Elephant and Castle), by private enterprise, and each of the five tall blocks is being financed and developed separately. Only the first to be built—the northernmost block—has been financed by the city.* Its architect is David Helldén, who previously worked with Markelius on the master-plan and was nominated by him for this job.

The architects of the other four blocks —chosen by the developer in each case— are Anders Tengbom, Markelius himself, Lars-Erik Lallerstedt and Backström and Reinius. It is only natural for the Englishman to wonder whether the consistent style and quality is due to Swedish private developers choosing better architects than English, to their greater willingness to consult among themselves, to more intelligent guidance from the planning authority or simply to the whole modern architectural tradition in Sweden being of a more civilized, less self-assertive, kind. We have had enough depressing experiences in London to be able to guess what five property developers, each looking after his own interests and indulging his own prejudices and those of his architects, would be likely to make of a similar scheme, even if our authorities—which they seem unable to do—created the opportunity of redesigning so large an area at one time.†

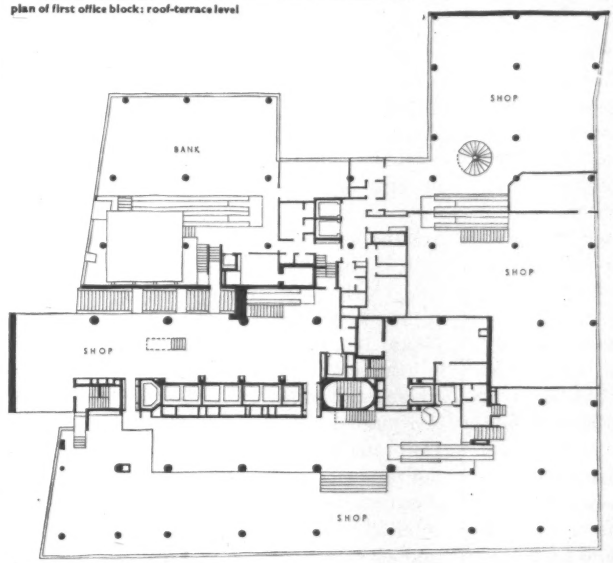
There are variations in the internal planning of each block and in the treatment of the façades. For example the framing of the curtain-wall is aluminium in the case of the first four and steel in the case of the fifth (the southernmost, by Backström and Reinius, yet to be finished), and the southern face of this one is to have more modelling, possibly with an arrangement of bay windows, since it faces the wide Sergels Torg traffic circus instead of the comparatively narrow space between it and the next block. Then there is a degree of variation in the design of the curtain-walling itself. This is exemplified in the two blocks fully completed: the first



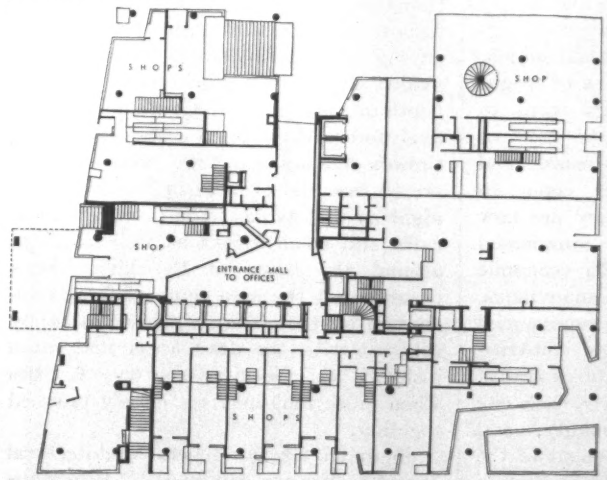
typical upper floor plan of first office block



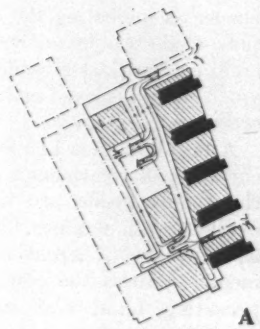
plan of first office block: roof-terrace level



plan of first office-block: first floor level



plan of first office-block; ground level



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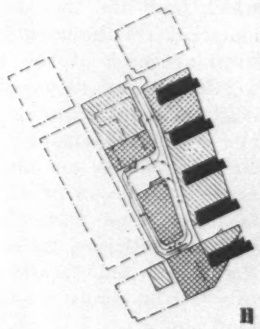

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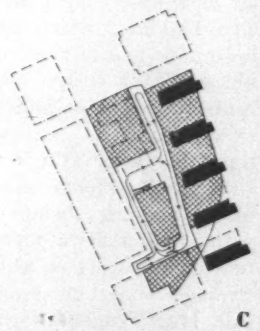


C

The three diagrams above show uses of space and traffic circulation in the three basements beneath the office blocks and surrounding areas: A, upper basement; B, middle basement; C, lower basement. Diagonal hatching indicates storage; cross-hatching indicates parking.

* And contains a central-heating plant for all five.

† There are promises of better things in London's partly built South Barbican scheme, though the architectural consistency shown here is partly spoilt by ill-conceived street-furniture and other details—see AR May, 1960.

(David Helldén's northernmost block) has a 75 cm. façade module, with double units and single units alternating horizontally, the single units providing the opening lights. The latter (Anders Tengbom's block) has a 110 cm. module, each unit—and therefore each window-size—being the same. The infill panels between windows are grey in one case and dark green in the other. These variations are of some significance as indicating the considerable latitude that can be allowed to individual architects within a unified scheme, provided certain rules of scale and massing are observed.

A criticism that has been made of this curtain-wall treatment as a whole is that the rooms inside are likely to become overheated in summer. The danger of this is, of course, inherent in all such treatments—witness the complexities of compensating blind and sunshade seen in many curtain-walled buildings, some of which indicate thoughtless use of the material. Yet the advantages of light and sunshine most of the year are usually worth the need to screen interiors at the height of summer—and the Swedish summer is short. It remains to be seen whether an unreasonable amount of screening is needed on the somewhat exposed southern façades of these particular buildings.

Other criticisms made in Stockholm of the curtain-wall façade as used in these five tall buildings are of a more general kind and arise, I think, from mistrust of an inevitable change in the character of city building, which Stockholm is only beginning to experience. This is the first big group of curtain-walled buildings in central Stockholm, and therefore the first example of the somewhat impersonal, repetitive idiom the curtain-wall brings with it. Stockholm is accustomed to its major buildings being monuments, each with a personality of its own, and finds this new combination of scale and anonymity strange. Some find it especially so alongside Ivar Tengbom's concert-hall which, according to conventional ideas of neighbourliness, the new buildings seem to affront.

But ideas must change as commercial rather than civic buildings come to dominate city skylines, as they are now doing everywhere, and as commercial buildings grow in height under economic and population pressures. The anonymous, diagrammatic character of the commercial block is not only inevitable for constructional reasons but is generally desirable. It would be disastrous to have each one asserting a separate personality, and focusing attention on a component of the city that is essentially no more than a component; that is, one which is in no sense, as were the towers and spires of the earlier kind of city, an expression of the city's collective identity. What is happening as a result of these new developments is that the conventional picture is being reversed; instead of the anonymous, repetitive foreground above which rises an array of attention-catching architecture, we have our anonymity in the air, forming a background to structures of all kinds lower down, in which richness and individuality are concentrated.

Nor are the earlier monuments we value necessarily the worse for being seen as a kind of sculpturesque foil against the diagrammatic architectural backgrounds of this new day. According to traditional judgments they may be 'dwarfed,' but the scale of the new tall buildings is nearer that previously associated with landscape, and certainly Tengbom's concert-hall at Stockholm is well set off—and gains from the contrast in tone and solidity—by the simple shapes and surfaces of the new tall blocks—as it were the urban mountain scenery—towering beyond it.

In order to make this contrast most effective, what we ask of the anonymous commercial buildings now beginning to dominate our city centres is simplicity of outline, lightness of treatment and precision of finish. On these counts the new commercial centre of Stockholm comes out well, though the handling of detail in the later blocks shows signs of not quite reaching the excellent standard set by the first. Where it comes out even better is in the treatment of the two-storey shops, the terraces, bridges and roof-gardens that surround the base of the five office-blocks. They are crisp and lively, and acquire sufficient visual complexity as one moves about and around them to create the richly detailed foreground needed as a foil to the smooth superstructures whose pale tones at times melt into the sky. Lettering, advertisements, illuminated signs, planting and paving of the customary Scandinavian quality all play their proper part in creating depth of tone and variety of detail in this lively foreground—to say nothing of people. Crowds moving about the various levels are an essential element in the scene—by night as well as day. The proliferation of cafés and small kiosks as well as shops around the bases of the high blocks ensures that the area retains life and activity after the offices are closed, a happy contrast with the dead areas that often disfigure the business centres of cities when office buildings are closely grouped together.

So much for the general architectural aspect of the new buildings. It is perhaps worth concluding this article by referring to one more specialized aspect, because this indicates the attention that Stockholm has given to every problem that arises in central area planning—including problems that other cities still have to face. This specialized aspect of the scheme is the control of illuminated advertisements and the efforts that are being made to give them a civic as well as a commercial value. The Stockholm authorities have given this much thought in connection with the scheme described herewith, though it is too early yet to say what success they will achieve.

The blank end walls of each of the five tall blocks contain cavities for neon-lighting transformers so that there need be no visible wiring in daytime. The city's policy is to restrict illuminated advertisements to these end walls and not to allow them on the side walls.* To preserve the scale, the western end of each block—that overlooking the centre of the city—is to carry one advertisement only; the eastern end can carry a number, but not more than five. Other principles the planning-office are trying to lay down are that signs should be designed to look attractive in daylight as well as when lit up and that there shall be some architectural control over their form, colour and lettering. David Helldén himself designed the first big sign on these buildings, on the end wall of his own block. It does avoid being architecturally damaging in daytime but he has run into one of the accustomed difficulties—the conflict between improvement of lettering and the use of established trade-marks.

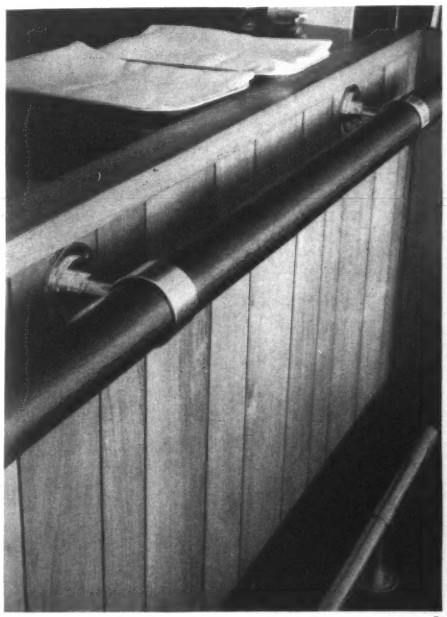
In theory the city building council can control the design of signs under legislation similar to that which the LCC delegates to the metropolitan borough councils but, as in London and almost everywhere, controls that depend on the withholding of planning permission are not powerful in practice. The financial value of advertising sites in particular results in resistance to control on the part of both advertisers and building owners, and whether illuminated signs are an asset or a menace to the townscape must depend in the long run—as must so many other things in a democratic community—on a balance being struck between co-operation and compulsion. The position, however, remains promising because the respect we have for Scandinavian city-planning is largely based on the genius the northern nations seem to have for striking such a balance successfully.

* The difficulties of control, incidentally, are illustrated by photographs 3 and 4, in which it can be seen that a large sign saying Ford has already intruded on to the top of the first block.

Bar, Restaurant & Entrance Hall: Hotel in London

architect: Michael Rosenauer
interiors: Charles Warmouth of Henry End Associates

The general planning and the bedrooms of the Carlton Tower Hotel were discussed in AR October 1960, but the public areas, illustrated here, represent different problems and deserve independent treatment.



1

1, counter-front of the bar serving both the main dining room and the cocktail lounge. The traditional brass foot-rail is supplemented by a leather covered leaning rail carried in handsome brass brackets.
2, as the bar-front suggests, this area is an exercise in Functional Tradition *de luxe*. Buttoned black leather seating, planked walls and framed prints are all in the public bar tradition, but the 'prints' are originals by Feliks Topolski, and the tables, with their tiled tops, are suitably smaller than public-bar scale.

ID
a monthly review of interior design

2

3, a general view of the lower restaurant (the Rib Room); the bar may be seen in the distance, and the cocktail lounge lies to its right, off the picture.

4, telephone booths in the main stair-well; vertical structure of mahogany and rosewood, shelf and floor of marble.

5, the stair-well; balustrade in brass with black leather handrail, the wall on the left in panels of antiqued mirror.

6, a view across the main lobby towards the doors; the floor in calicatta marble carpeted in the seating areas only; lounge chairs and marble side tables grouped around glass-topped tables almost six feet square.

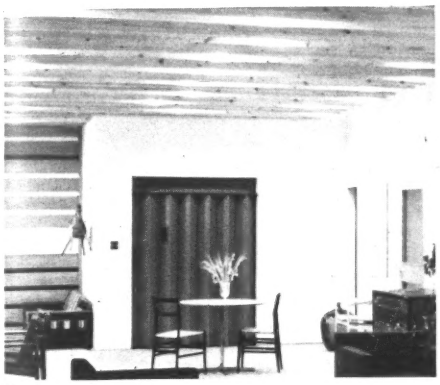
5

6

Showroom in Hanway Place, London

designers : Conran Design Group

A characteristic nineteenth - century school-building on a restricted site, converted to provide a ground-floor entrance lobby and a showroom and offices above, for the Conran Group, without disturbing existing occupiers.



7

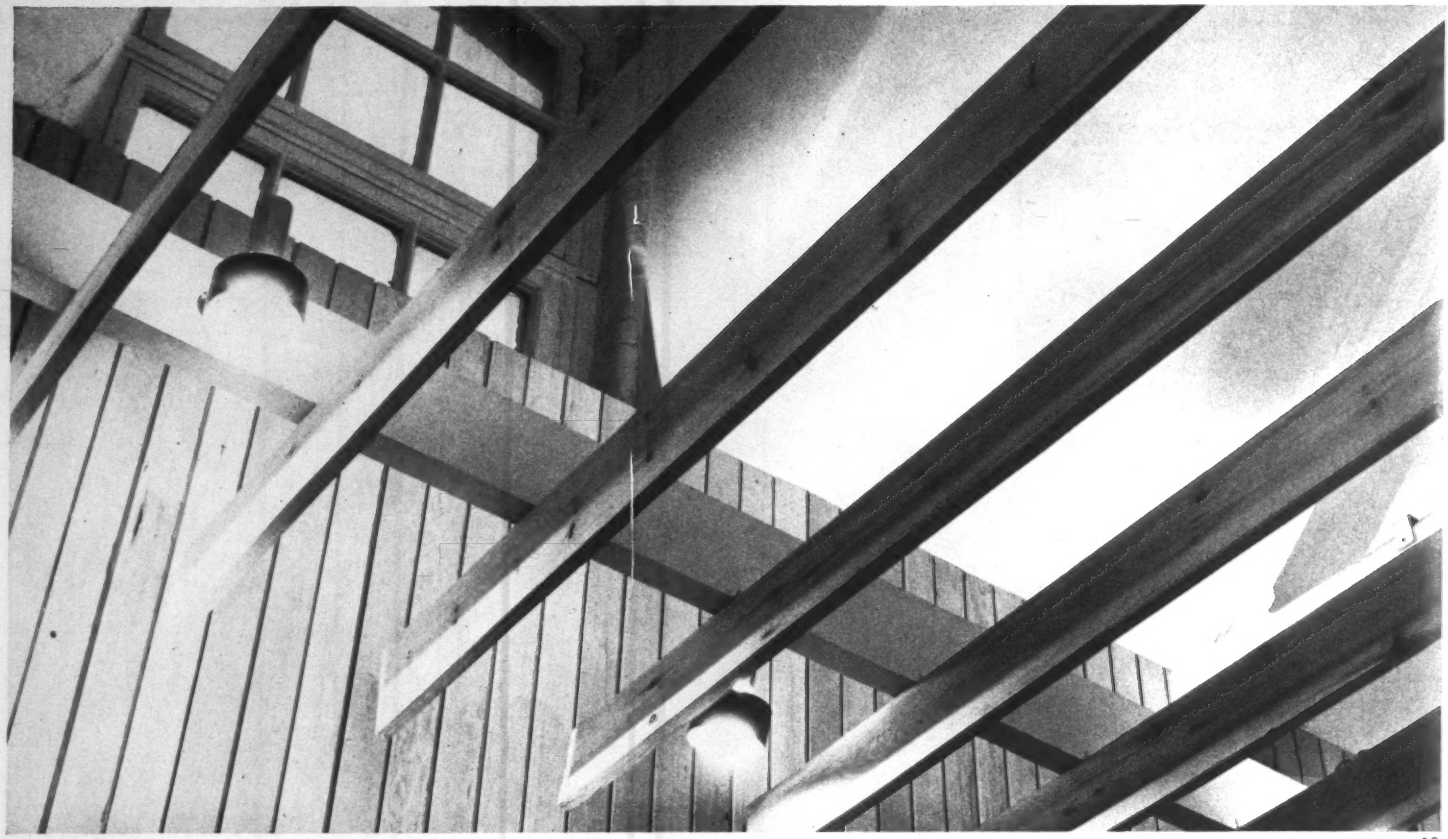
7, the showroom, formerly the main hall of the school, looking toward the former service lift which is the main means of access from street-level.

8, a view down the full length of the showroom, which is used to exhibit fabrics as well as items of furniture. The apparent ceiling of planks on edge, which conceals the high trussed roof of the hall, is illustrated in detail in 10, over the page.

9, the basic architectural repertoire of the showroom is extremely simple ; painted brick, waxed wood, including a simple cover-bead where carpet meets wall. Visible beyond the lift are the offices, which are housed in a projecting wing at the back of the block.

8

9



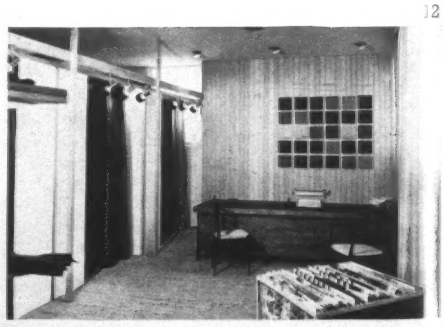
10

11

10, part of the original school-hall roof, seen above the vertical tongue-and-groove hemlock siding of the showroom, and the false ceiling of six-inch planks on edge at twelve-inch centres. As will be seen, this ceiling is carried clear of the wall by beams running the length of the room.

11, light-fitting, wooden framing and curtain tracks of one of the display cubicles in the fabrics room. A row of three cubicles, each completely walled from its neighbours, independently lit and provided with sufficient front wall to conceal fabrics that are not being viewed, makes it possible to show full length pieces in their natural drape and fall without visual interference from other fabrics.

12, the fabrics room, seen from the showroom door, showing the cubicles on the left. Other fabric samples are displayed on the shelves, extreme left, and in the adapted filing trolley, right foreground.



12

ID

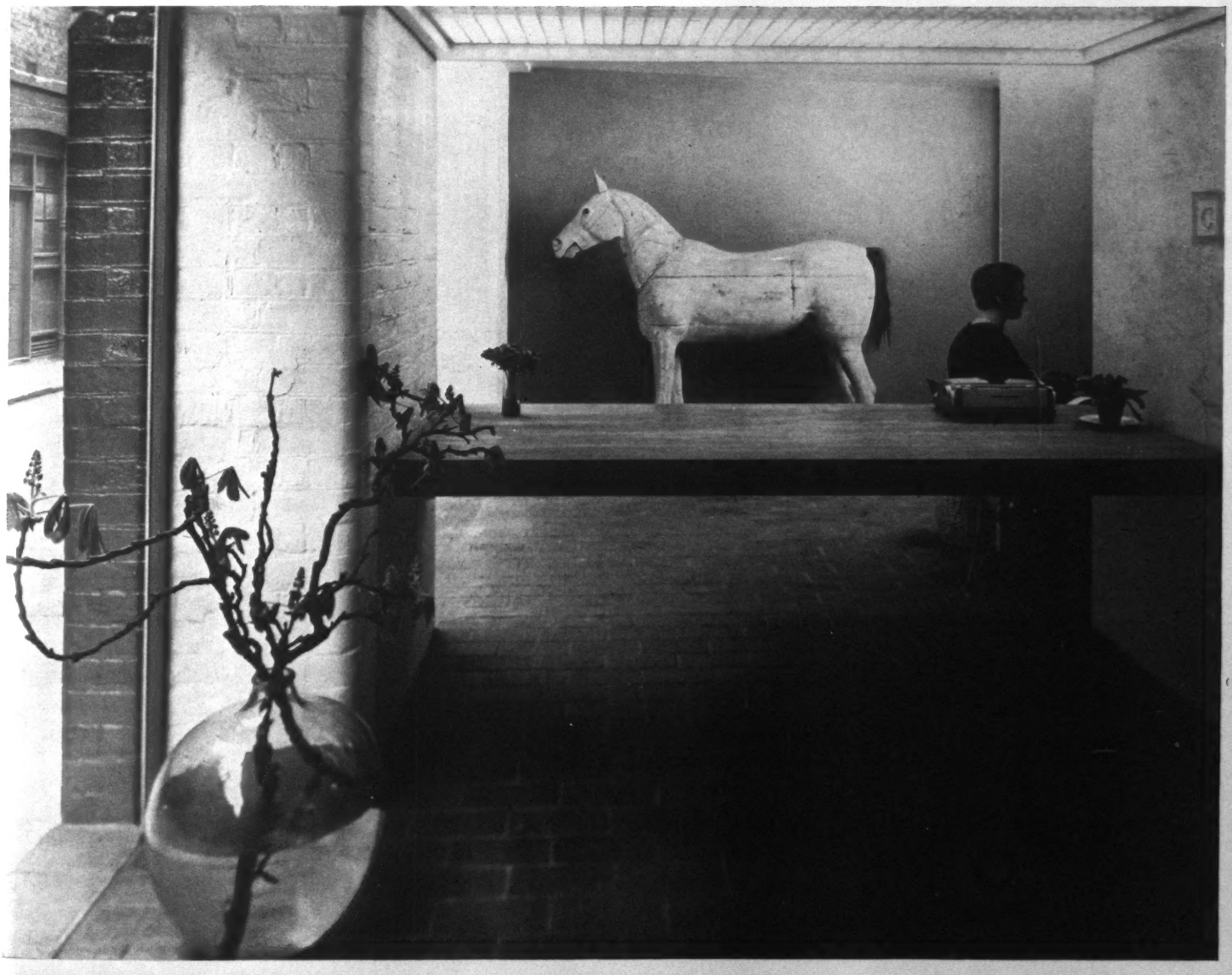
Showroom in Hanway Place

13, the entrance lobby, seen from the street: the construction and form of the archways gives some idea of the original quality of the architecture throughout. the fill of wooden slats and plate glass is an earnest of the treatment of the upstairs rooms, which are reached by the lift just visible down three steps behind the street door.

14, the reception desk in the entrance lobby; the painted brickwork of the piers and the brick floor give an elegantly transformed continuity with the Victorian commercial architecture outside. On the right, the company's house-mark is cut in a marble facing slab, while the life-size wooden horse (like that in the showroom) may be regarded as something of a personal mark of the proprietors.

13

14



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Farnham Castle
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Air views of Farnham (opposite): the upper showing the long main street sequence; East Street **a**, *West Street* **b**, *the lower showing how the town is bounded to the north by Farnham Park* **c** *and The Hart* **d**.

FARNHAM DEAD OR ALIVE?

Ian Nairn and Kenneth Browne

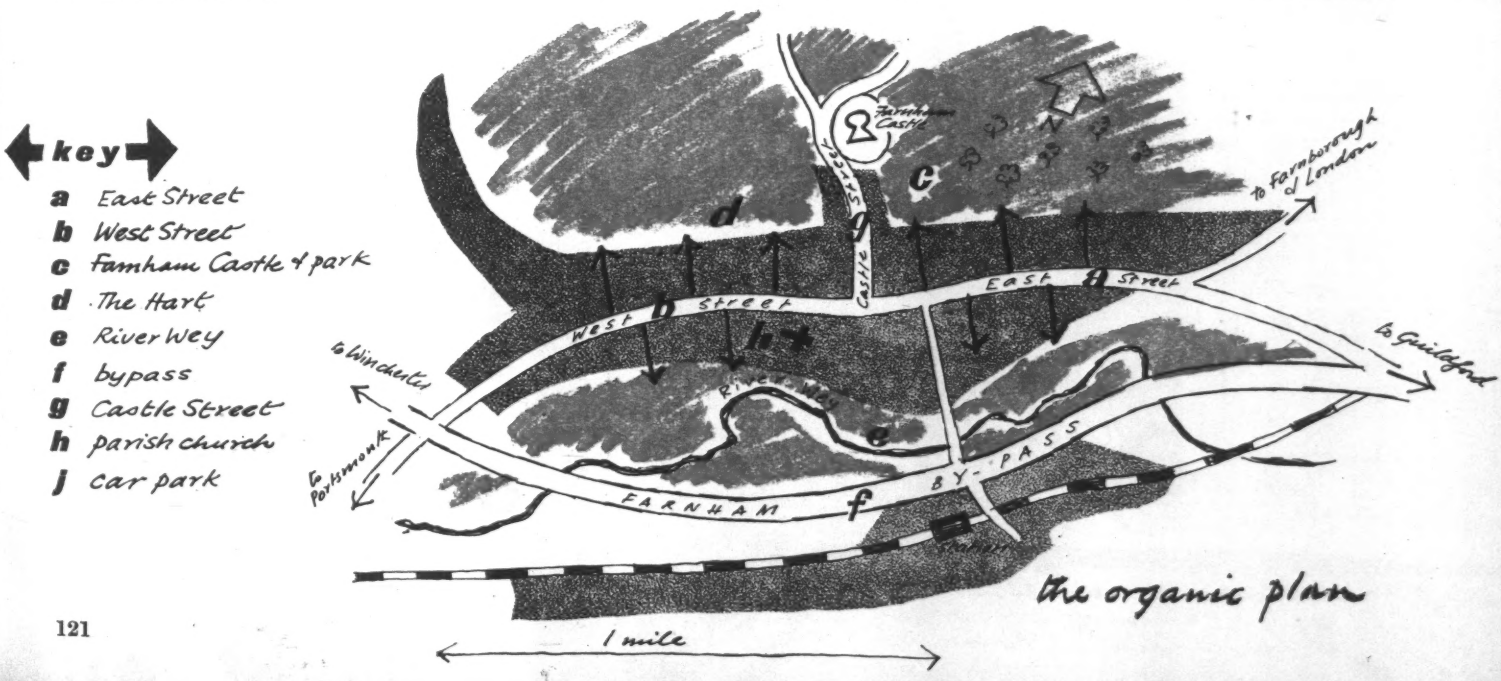
It may seem absurd to suggest that there is anything at all wrong with Farnham in Surrey. Two first-rate Georgian set-piece streets, a scheme of preservation and renovation that goes back to 1910*, and an admirable attention to detail by the local officials, shown particularly in the deft fitting-in of a car park on derelict back land right in the centre of the town.

And yet . . . not a single modern building in the town centre, dozens of mock-Georgian buildings done so cleverly that they devalue the real thing, every shopfront with tasteful modest lettering, every street now pretty and polite. The odd thing about Farnham is that, even with all this preservation, the real pattern of the place, the overall organic plan, has gone almost unrecognized. The long main street sequence of the genteelly shabby East Street, ***a,*** and the genteelly grand West Street, ***b,*** is in fact only the filling to what is potentially a very exciting linear sandwich. On the north side, after a few blocks of cottages honeycombed with footpaths, there is the park of Farnham Castle, ***c,*** and a wedge of real country, frayed at the edges but still intact, coming down to touch the town at an area of broken-down allotments called the Hart, ***d.*** On the south side the river Wey, ***e,*** runs parallel to the town for its whole length, providing a ribbon of poplars and water meadows a few yards from the town centre. It is a very thin ribbon, with the by-pass, ***f,*** immediately on the other side, and it needs intensifying—overemphasizing, as actors have to put on heightened make-up—if it is to stand up to the force and solidity of the other two components.

The contrast is there: what is needed is to make it expressive. And the easiest and simplest way for Farnham to save itself from the risk of ossifying is to seize on the differences and divergences in its parts and make them expressive too. East Street, mentioned earlier, could happily become a rough-and-tumble shopping street, West Street needs to find other means of enhancing its dignity than three shopfronts. The famous Castle Street, ***g,*** is almost perfect, but the richness and variety of the old buildings need not 'good taste' but the firmness and expressiveness in the street furniture that the early nineteenth century understood so well.

The danger is a real one, and not only for Farnham: it is just around the corner for dozens of other towns—Chichester, Rye, Amersham, Cirencester—that risk of being killed with kindness. The answer is not to tear down large chunks of Georgian Farnham and replace them by chunks of Slough High Street (a place, incidentally, with more townscape potential than it is given credit for). All the existing care and

* This is largely the work of Harold Falkner, the architect, C. E. Borelli, the silversmith, and a handful of other enthusiasts.



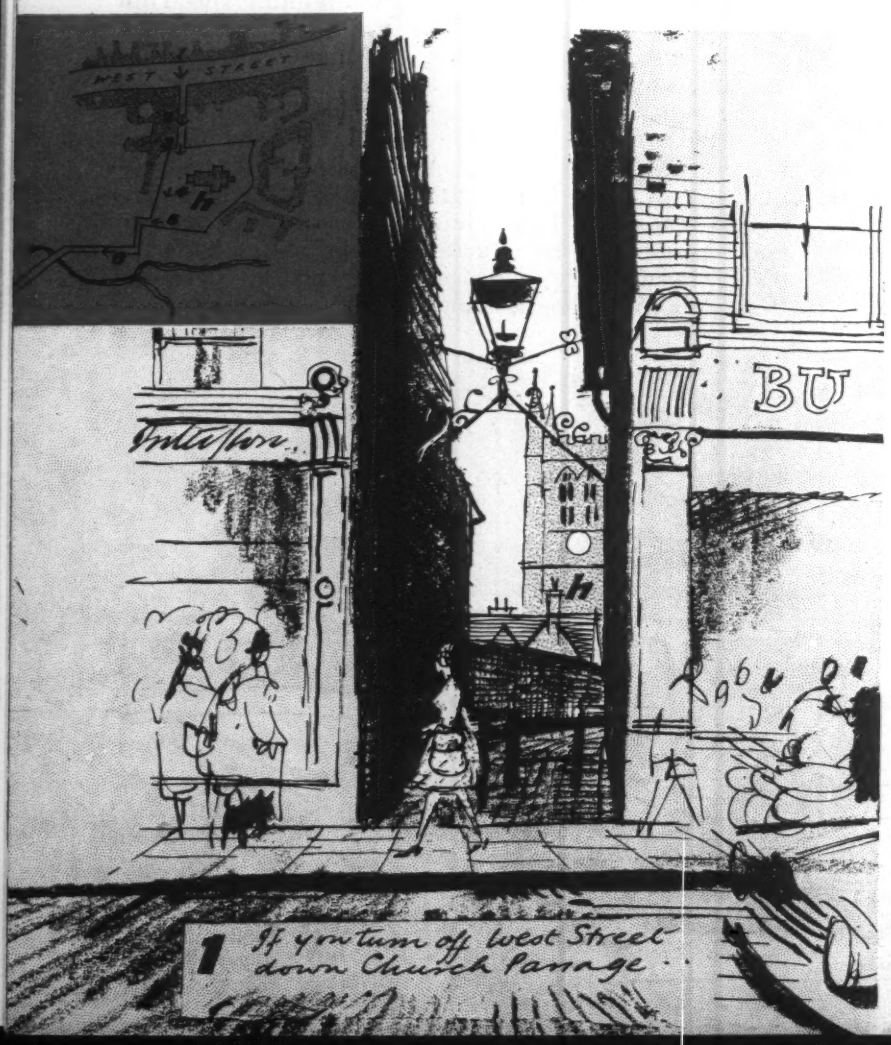
thought must remain, but be channelled positively into providing modern buildings with a standard of finish and self-respect equivalent to the Georgian houses, something like a country town equivalent of Lasdun's Peter Robinson store.

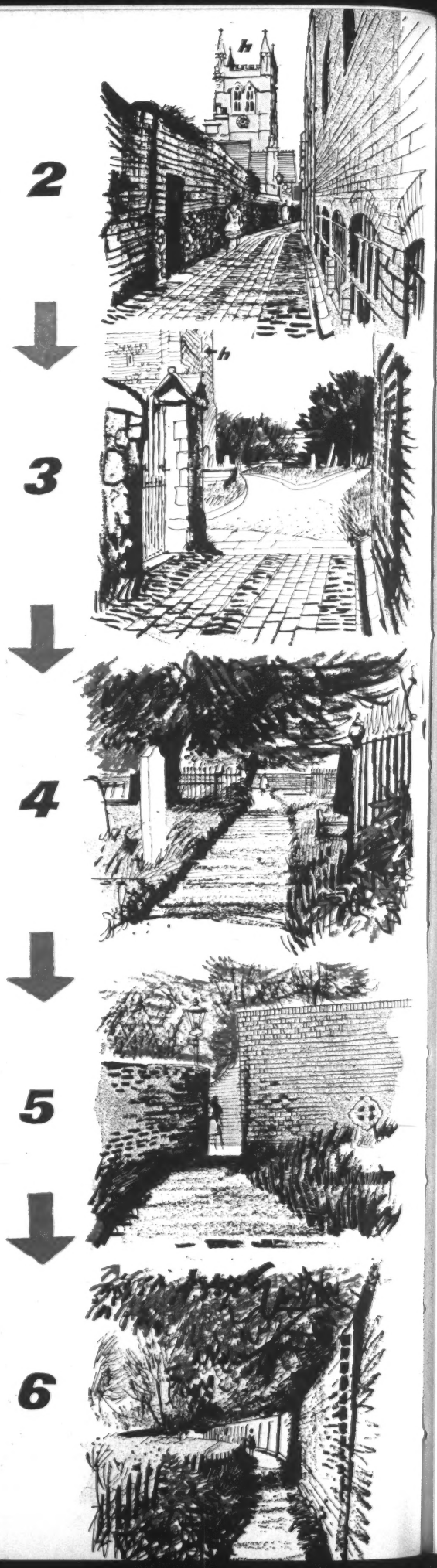
A butcher's shop called Toop's is about to be replaced; does its replacement have to take the weak easy way of providing what will get through with least trouble? Could it not achieve, at least, the quiet elegance of the new Woolworths' at Guildford, ten miles away? A new police station is to be built in the County Architect's department on the site of a robust builder's yard. Does it have to be unrobust, flabbily pedimented, queasily quoined? Those who know their Surrey and its official architecture will, alas, know the answer to that one.

In the end this is not a matter of taste. If the Neo-Georgian replacements had guts they might be justified morally. But as things are, each new building just sucks away a little more of the town's vitality. And vitality is the primary quality of any town, be it urbane or rough-and-tumble. Heaven forbid that Farnham should get to the state where people would come to look at the buildings, say politely 'oh, how charming'—and then go off to Aldershot to find a real place. It could happen.

ALIVE

1-6, *these sketches show a slice of the real, organic Farnham. The scene unfolds in a casual way when you turn off the busy main street down Church Passage; part of the pedestrian network which still remains unclogged.*



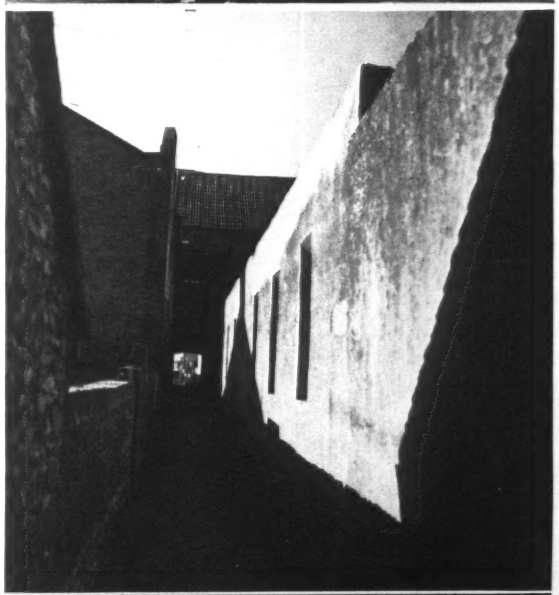

2
3
4
5
6
a narrow path bounded by high walls - opens on to the churchyard - turns & is constricted again by high walls - then follows the boundary of town & open fields

7,8

Castle Street ***7*** and West Street ***8,*** the showpiece streets of Farnham, are devotedly preserved, but a town is more than facades and the organic plan goes unrecognized. Until it is, such superficial exercises as the proposed face lift to Downing Street (pretty enough as it stands) makes nonsense. Old Farnham, as distinct from the new housing estates south of the railway, remains a linear, traveller's town (and through crazy signposting the London traffic via Farnborough still bursts through the main streets instead of using the bypass). On the north is the park of Farnham Castle ***9*** and a green wedge known as The Hart. To the south a narrow strip of watermeadows ***10*** before the bypass and this clear-cut transition from town to fields on both sides is a tremendous asset; it needs to be emphasized. Instead, the council are considering plans for building on The Hart, and so throwing the whole thing away. In how many towns can you walk north or south from the main streets and be in open fields in a matter of minutes? But the way you get there is important too—the visual experiences you go through in the process, such as the exploitation of enclosure and penetration ***11, 12***.

9

10



11

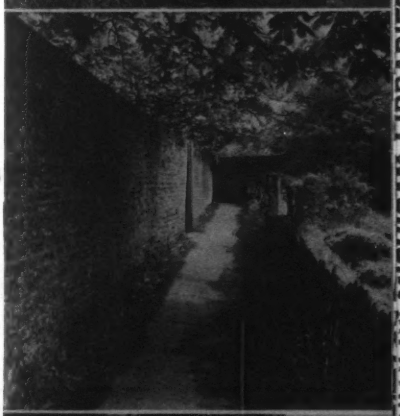
If you turn off West Street down Church Passage (***1-6*** opposite) the narrow lane leads through an exciting visual sequence in transition from shopping street to watermeadows. Seen in reverse and approaching from the fields ***13-21*** a high wall, marking the limit of the town, carries you along a path overhung by chestnut trees—turns sharply at right angles with the church tower seen over the wall, turns again, then through a needle's eye ***17*** and out into the open churchyard ***18***—then another narrow slit opens and, directed by the strong paving pattern, you are back in the bustle of West Street. ***21*** Across the way, a narrow road ***22*** leads between cottages ***23*** up another path ending in a stile ***24*** and beyond to the trees of Farnham Park ***25***.

12

These are examples of the basic pattern

13

14



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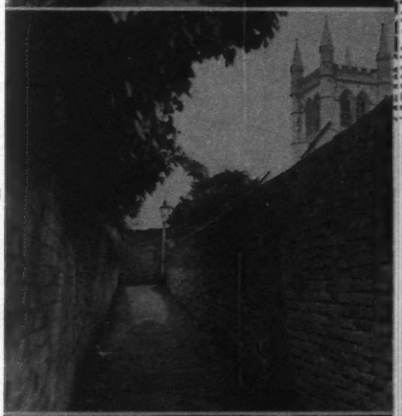

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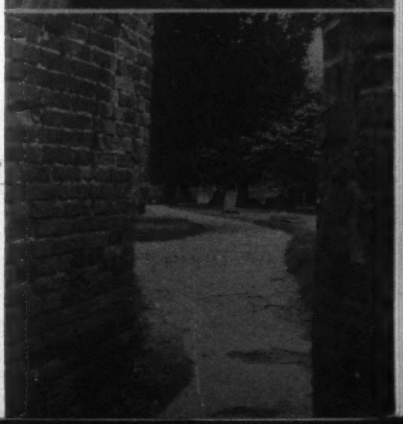
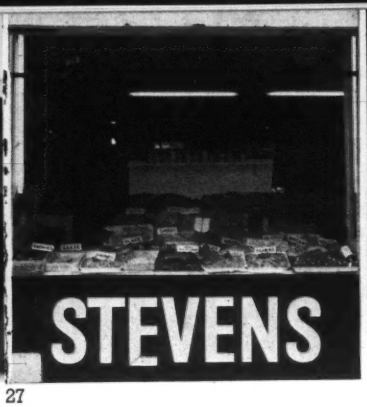


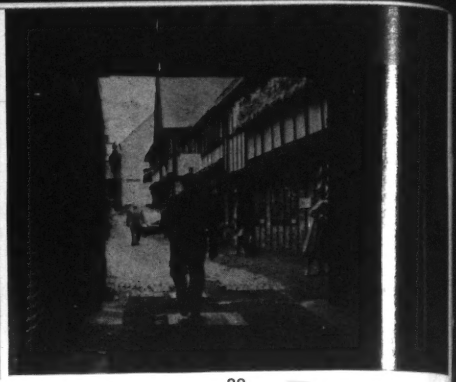
17

7, Castle Street; 8, West Street.
9, the town from Farnham Park.
10, Farnham from the bypass.
11, 12, enclosure and penetration.
13–17, pedestrian route from open fields to town centre (continued over page).

OVER

ALIVE





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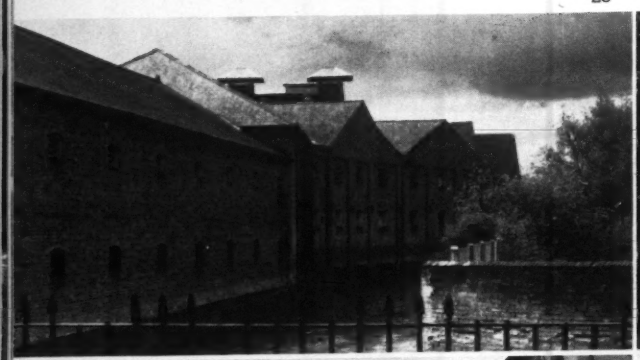

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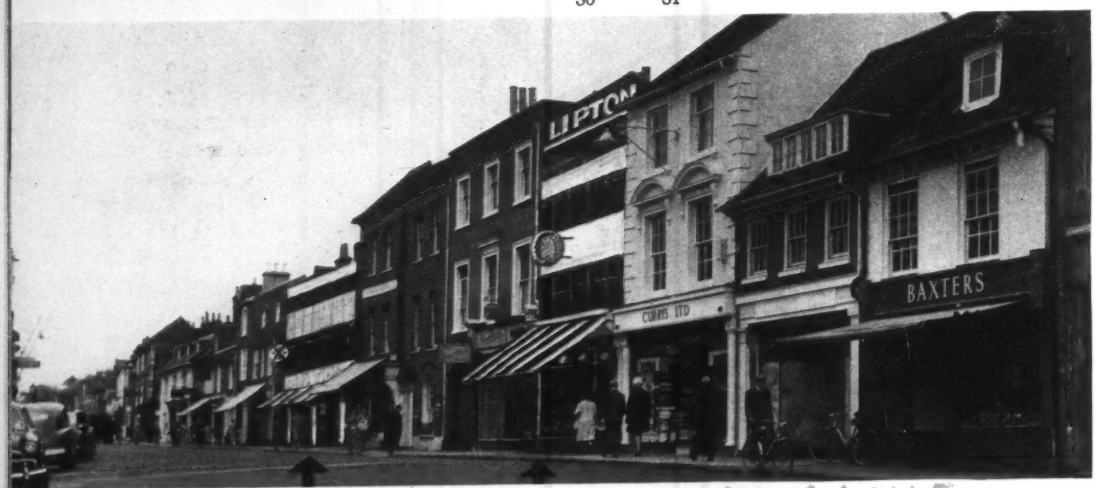

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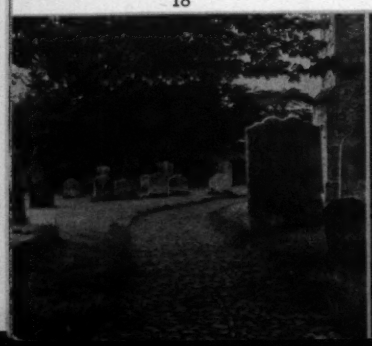

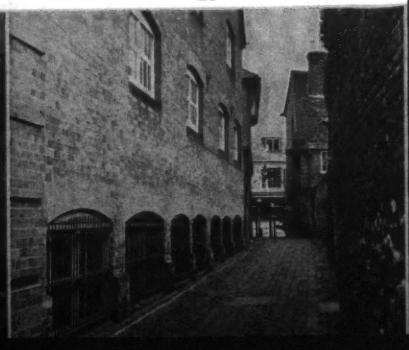

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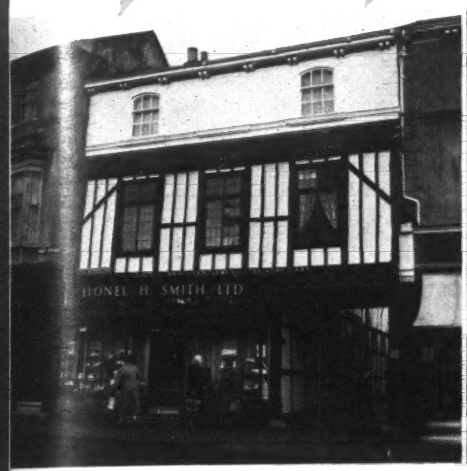
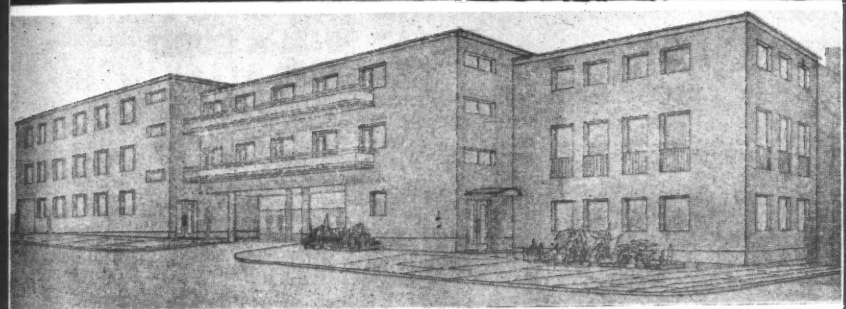
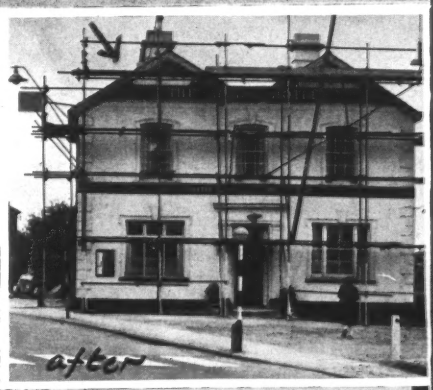






DEAD

kept coherent and alive. Elsewhere it has choked or run down, e.g. when you penetrate the street wall by The Lion and Lamb ***33***. After a good start, in 50 yards the scene deteriorates into a subtopian squalor of loading sheds, concrete posts and wire (contrast ***35*** with ***16***). Beyond is open country but what an introduction! Again, you soon discover in Farnham that the dead hand of respectability is everywhere, slowly suffocating its character. In detail you have to search to find lettering with any strength ***26, 27***—all is thin and discreet, neither sans nor serif ***36, 37***. Worse, the buildings themselves are not appreciated for what they do to Farnham but only for how they fit into a respectable classification. This
36 wall-eyed attitude to buildings is leading to
37 the decay or destruction of some of the best of Farnham, like the functional tradition maltings ***28*** and timber sheds ***29*** (the latter to be replaced by the police station already mentioned).

Again, the Westminster Bank ***30*** facing the end of Castle Street is a first-rate example of what a building of character can do to a street—in this case really holding the junction of Castle and West Streets and proclaiming it as the town centre. Strong meat for Farnham; also Victorian and therefore held of no value. The same
38 blindness to good building goes for the charming Victoria Terrace ***31*** also threatened. By contrast, anything with a Disney touch ***36*** is welcome as being 'in keeping' instead of being recognized as an insult to the real buildings. New building in Farnham should be modern but good, not phoney ***38*** (this faceless edifice is to replace Toops in West Street). There is no earthly reason why modern buildings should not fit in; ***32*** the streets are a mix up of
39 styles anyway (see ***7***), not the Georgian
40 perfection some like to think.

The approach from London shows Farnhamitis rampant. The Albion, once a four-square Victorian pub ***39*** strongly holding its position at the junction of the Farnborough and Guildford roads, is being medievalized by removal of its straight parapet ***40***. The reason? Because flat roofs are not in keeping with Farnham. At the same time, a stone's throw away, East Street has been carved open for the messy forecourt of a petrol station ***41***, completely breaking the streetline. Such confusion of
41 values just doesn't make sense.

18–21, *continuation of sequence from fields to West Street.*
22–25, *sequence from East Street to Farnham Park.*
26, 27, *lettering on West Street pub and Downing Street fishmongers.*
28, 29, *functional tradition.* 30, *Westminster Bank.*
31, *Victoria Terrace.* 32, *How modern buildings (arrowed) could fit into West Street.* 33–35, *sequence from The Lion and Lamb.*
36, *Noddieland.* 37, *emasculation.* 38, *faceless new building.*
39, 40, *the Albion before and after.* 41, *servicing squalor, East Street.*

1, *looking south along Berwick Street, towards the tower block of flats.*

HOUSING, OFFICES AND SHOPS, SOHO, LONDON

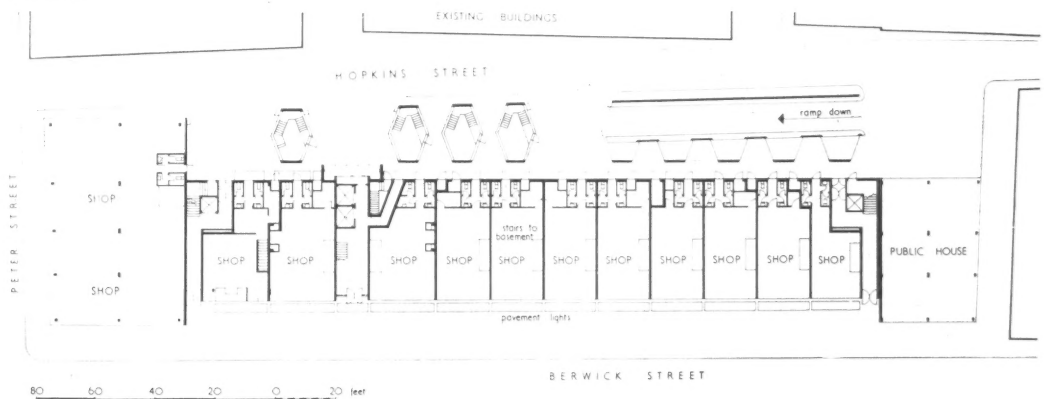
ARCHITECTS: RICHES AND BLYTHIN

In Berwick Street; designed for the Westminster City Council after most of the site had been declared a slum-clearance area in 1955. It was the first large scheme to respond to the London County Council's call for truly mixed development in central area rebuilding. The residential accommodation is in a tower, which rises above a three-storey slab block consisting of thirteen shops on the ground floor (facing the traditional Berwick Street market) and offices and showrooms above. The total height is 18 storeys.

In the basement is a car-park (reached by a ramp from Hopkins Street), a boiler-room and stores for tenants and shopkeepers. The shops and showrooms also have access and loading-facilities in Hopkins Street. Their main entrance and that of the flats is in Berwick Street. The flats are reached from a central staircase and consist of six one-room flats, fifty two-room and one four-room. Normally there are four flats on each floor of the tower.

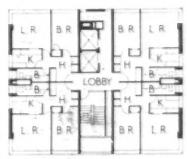
The building has a reinforced concrete frame with flat slab floors and roof. The walls of the lower slab block and the front and back walls of the tower consist of storey-height steel frames, incorporating reversible windows, spanning between galvanized pressed steel mullions. Facing materials are brick, reconstructed stone and glass mosaic.

second floor plan



ground floor plan

2, *the tower block from the south.*



typical floor plan, tower block

N

3, *the telephone building from Farringdon Street.*

TELEPHONE BUILDING, FARRINGDON STREET, LONDON

ARCHITECTS: MINISTRY OF WORKS
(senior architect, W. S. Frost, assisted by N. V. A. Crick)

Designed as London's new telecommunications centre, the building houses the automatic switching exchange which gives access to the whole of the United Kingdom, the Continent and other places abroad. It will also accommodate in due course the Fleet Street telephone exchange and, still later, another exchange if need be.

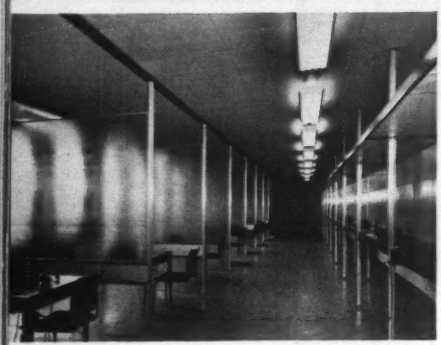
There are fifteen storeys, the lower six being 14 ft. 9 in. high from floor to floor, designed to take heavy equipment. The upper nine storeys, used for offices, are of normal height. The 11 ft. 5¼ in. module on which the planning is based was determined by Post Office apparatus layout.

4

An 80 ft. height limit in Farringdon Street was required by the planning authority; the height of the tower—approximately 165 ft.—was determined by daylighting. At street level the Farringdon Street elevation is enlivened by faience murals and showcases for Post Office exhibits. The Stonecutter Street frontage is wholly taken up at street level by a dining-room and kitchen, placed here because of the size demanded by the staff using the building. There are also an assembly-hall with stage and facilities for showing films, two conference rooms which can be used in conjunction with it and, on the sixth floor, a recruitment centre with medical examination rooms, etc., for the whole London telecommunications region. On the fourth floor is a sales department where equipment can be demonstrated, and on the top floor a training department for telegraphic instruction and foreign languages. Here there is special acoustical absorption in rooms and corridors.

Construction is reinforced concrete, with solid floors in operational areas and hollow-pot office floors and roofs. The external facing is Portland stone except on the end walls where it is Derbydene stone. Window frames are teak except in the dining-room where they are aluminium. Windows to offices and most of the operational areas are double glazed, with Venetian blinds between the two sheets of glass.

Telephone Building, Farringdon Street, London



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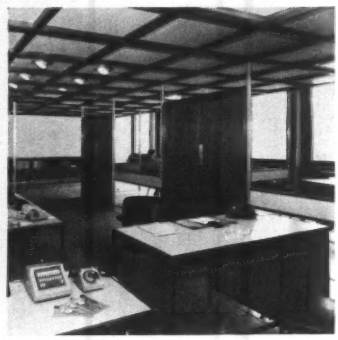

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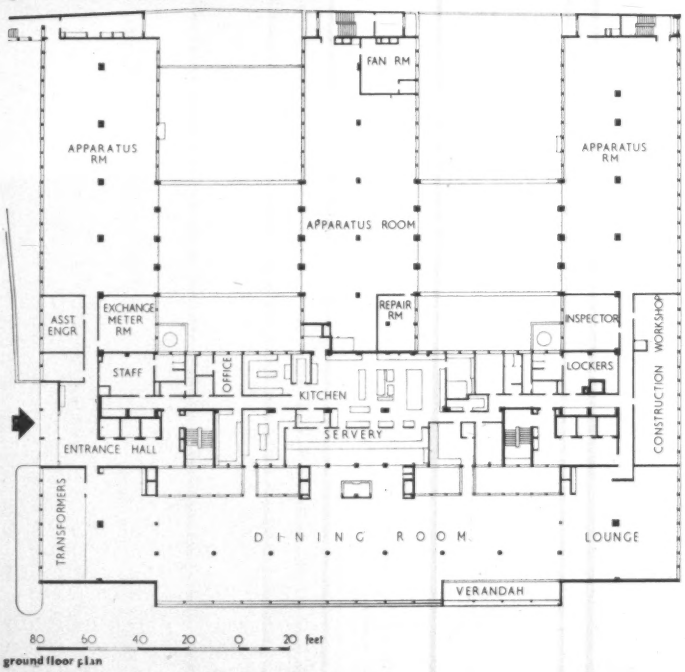
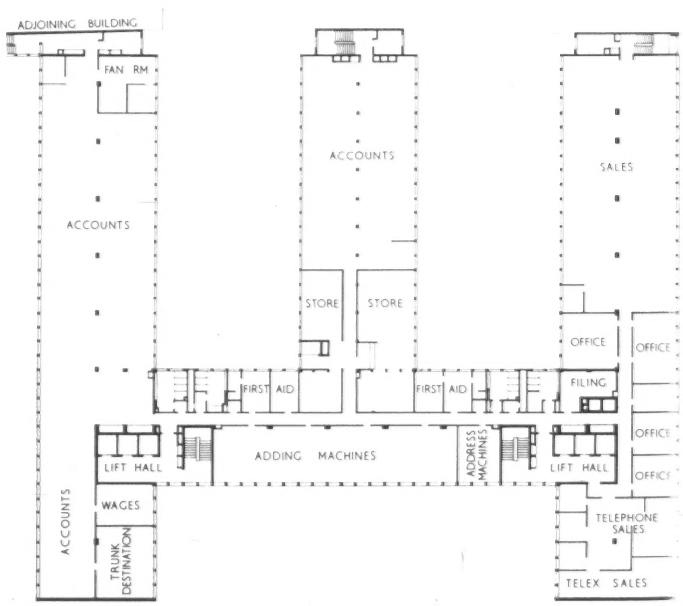
4, close-up of the dining-room wing. 5, the recruitment centre on the sixth floor. 6, the sales and demonstration area on the fourth floor.



ground floor plan



upper floor plan

EXHIBITIONS

PAINTING

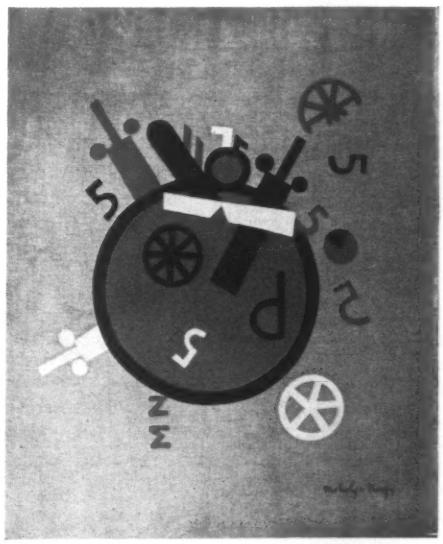
William Scott is probably our most professional painter. His art is firmly based on a master plan derived from the synthetic cubist still life—an aerial view of a table and an eye-level view of the objects on it—and he has managed to keep this still life formula in a constant and lively state of transformation which reflects the major stylistic changes of the post-war years whilst maintaining an air of independence and isolation.

His recent exhibition at the Hanover Gallery was the first in London for five years, but in the interval he has been holding exhibitions abroad which have greatly enlarged his international reputation. The new oils are large, but although he has obviously taken account of the expansiveness of the Americans his paintings do not have that stretched look which is one of the most remarkable characteristics of the Americans, giving the spectator the pleasant illusion that he can jump across yawning chasms: Scott's art is still a matter of forms and intervals, and offers the pleasures of proportion rather than those associated with its negation.

His forms have taken on an artfully crude appearance, and have lost their old associations with kitchen utensils, except in some of the gouaches. In the oils, the table top appears to have turned into a blackboard (in various colours, and naturally a bit cockeyed) and this impression is reinforced by the marks inscribed on it, which suggest that an exuberant but innately tasteful child has made an *art brut* out of the geometry lesson, as in 'Circles Diminishing,' 1. This title and some others—'Two Forms Gathering,' 'Blue Circle Entering' and so on—declare his interest in the idea of a process still at work in the finished painting, and the process he seems to have in mind is partly to do with the visible traces of the wrist movements made when drawing the shapes, and partly to do, as 'Circles Diminishing' indicates, with an invitation to the spectator to stare himself into optical delusions. It's a curious thing, but although illusionist tricks are still heavily frowned upon in representational work, they have become a permissible and thoroughly *avant-garde* ingredient of abstracts.

If, as Baudelaire contended, the pleasures derived from line and colour are absolutely independent of the subject of a picture, it can be said of Scott, whose subject is the art of our time, that the incalculable factors in his art which, after his prudence and calculation are allowed for, leave one with so strong a sense of his independance, are his exquisite feeling for relations of tone and the mysterious rightness of his asymmetrical arrangements.

I expected to find the Moholy-Nagy paintings at the New London Gallery all stiff and obsolete and rather pathetic in their period solemnity. It was quite otherwise. They were gay, cool and elegant, even humorous, as in 'The large Emotion Meter,' 2, painted in 1920, and his curiosity about the science of optics has given his paintings a quiet and, as it seems to me, ineradicable magic. Experimental enquiry has bestowed upon them an unassuming purity which I find infinitely preferable to the cold geometries in which Kandinsky mechanized his spiritual fervours.



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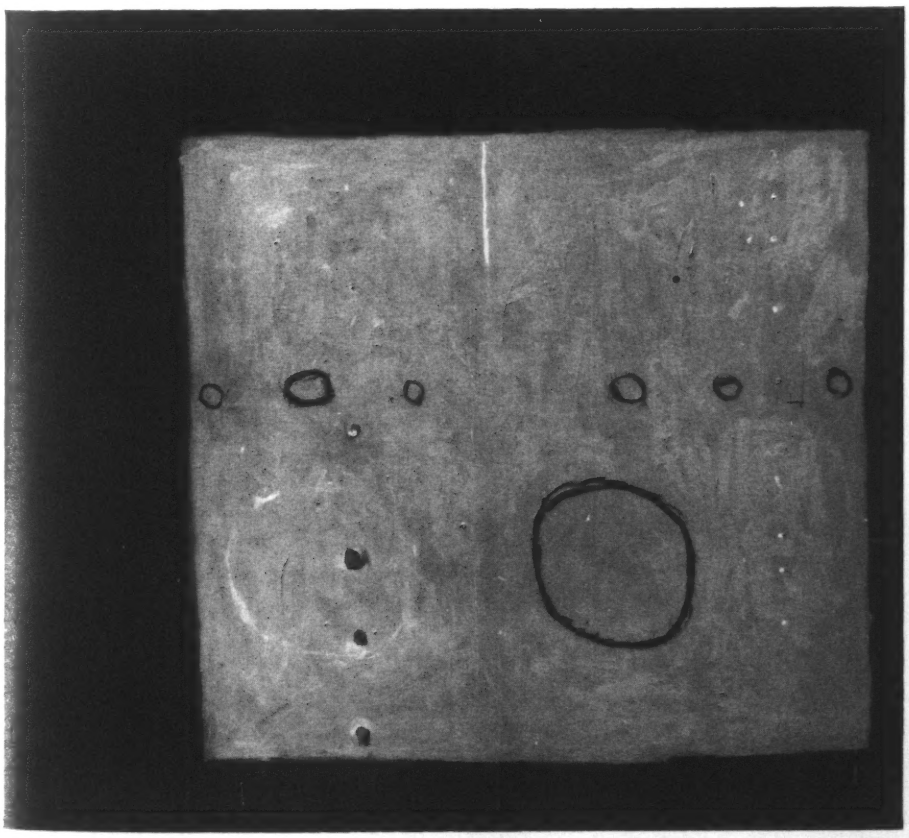


1

It's becoming almost impossible to write prefaces for one-man shows. One is expected to write strictly in terms of praise. I, for my part, continue to be fascinated by contemporary art, but sometimes feel that it's the most punishing of my vices. For this reason, I'm afraid I wrote a very obscure preface for Tektas Agaoglu's first one-man show in London recently held at the Drian Gallery. He is a young Turkish painter who works with thick pastes in the manner of Dubuffet and Tapies, and I have not seen this technique put to more personal use by any other painter of his generation. The pigment ranges from a light sand colour to dark brown and a particularly effective coppery black; the texture is that of dried mud. He persistently raises a form from the paste that brings to mind archaic tombstones and commemorative tablets,

3

3, and the general effect is of a remote sad dignity, as if the painter were making monuments to pastoral memories out of the dustbowl of the present. The only thing that might retard acknowledgment of his qualities is the fact that his aesthetic is not quite up to date. He will have to find some way of avoiding the form-against-a-background picture, possibly by making a more deliberate play with the positive and negative aspects. At present they frequently give the impression that the background is something left over.

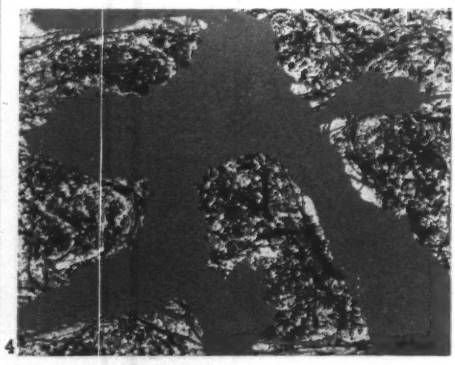
Asger Jorn's violent scrawls are highly esteemed in *avant-garde* circles, and as a bombastic display of virility they might almost be said to make Marinetti's 'roaring motor-car' an emblem of incapacity, but the paintings in his recent exhibition at Arthur Tooth & Sons were as pretty and sugary as the watercolours of Sam Francis. He called them 'luxury' paintings, and quoted four lines from Rimbaud in which the word 'luxure' appears twice. This may have been an *avant-garde* joke, implying that he was lusting after the money of simple-minded collectors in order to live in luxury. Certainly every picture was sold, and it would be a nice extension of the joke if they were bought by simple-minded members of the *avant-garde* elite rather than the Mayfair types who know a good boudoir picture when they see one and for whom they were obviously intended. Some of the pictures were sheets of colour spots, which made an abstract pointillism, magnified and Pollockized. Others were cut-up pieces from canvases of the same type arranged on a neutral ground, 4, and were clever pastiches of a kind of picture that Pollock was doing over ten years ago. If Jorn deserves congratulations for making couture out of automatic devices and other men's pictures, then I congratulate him.

In the catalogue of the Pollock exhibition recently held at Marlborough Fine Art, Lawrence Alloway approvingly quotes Jorn as saying of Picasso's famous 'Weeping Woman' that Picasso 'had painted somebody else's tears, whereas if he, Jorn, had painted such a head the tears would have been his own.' The stupid arrogance of this remark is almost beyond belief, but no sillier than Alloway's own statement that a miserably weak and farcical attempt on Pollock's part to do a painting of the Picasso theme is 'transformed in the direction of a greater tension and involvement,' and is at a 'higher pitch of personal intensity than occurs in a Picasso.'

Let me begin again. The Jackson Pollock pictures at Marlborough Fine Art were from the collection of his wife and ranged in date from 1933 to 1952, four years before his death. Half of them were painted in the thirties, and they make an illuminating background, hitherto practically unknown in London, to the drip paintings.

Lawrence Alloway's catalogue notes on them are intended as a contribution to art history and his catalogue as a whole undoubtedly constitutes the most thorough and painstaking study of Pollock's art that has so far been attempted. Sixty-two drawings and paintings covering twenty years of Pollock's activity have been examined by Alloway in a quiet, scholarly, analytical, dispassionate way befitting the work of one whose art is beyond controversy, and the crude headlines with which *The Times* greeted the exhibition—'Violent Side of Pollock,' 'What Early Works Reveal'—were singularly lacking in awareness of the nature of the occasion. It was a kind of crowning ceremony.

Pollock is treated both as an old master and the 'avantest' of the *avant-garde* whose mastery is founded on an impatience with the 'traditional graces' of such painters as Picasso, Miro, Klee and Masson. The efforts of these painters, whose chances of immortality have obviously been severely reduced by the intervention of Pollock, were, it seems, the dying spasms of nineteenth-century aestheticism, which could produce only 'disembodied and inhuman harmonies'. Presumably, the twentieth century begins with the drip paintings.



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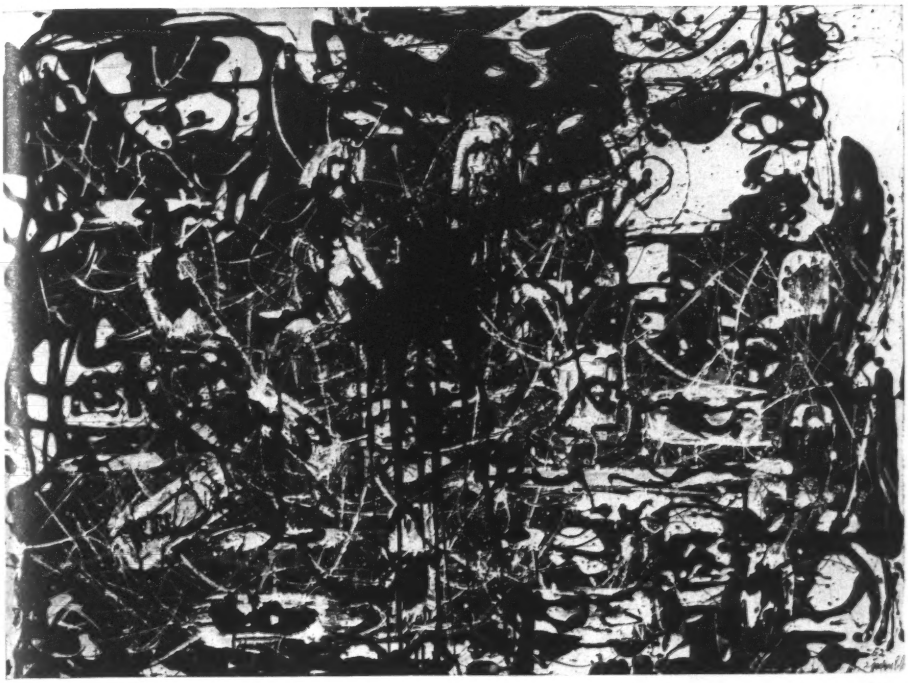
I can see that for the time being Pollock is the painter who best fits our idea of Now and Forever, but Alloway's reason for seeing him as the Final Sum of the European Tradition—'He makes the autographic mark of the artist, which since the Renaissance has characterized the individual artist as creator, the subject of painting'—is too logical and fits too snugly into what he himself calls 'the formulae surrounding the orthodox interpretation of European art.' He believes in Progress.

The Pollocks painted in the thirties are fascinating because the act of perpetrating them somehow led to a change of ground. They were probably done with the idea of creating a great new figurative art by paraphrasing the work of other painters, but they are horribly inept beside the work of the painters he was trying to challenge. The weakness of this early work does nothing to invalidate his later achievements, but Alloway's treatment of it lends it an insufferable pretentiousness; he treats every wretched and miserable paraphrase of Picasso as an improvement on Picasso and at the same time says very little about Masson, with whose work Pollock was, if anything, even more obsessed.

5

The catalogue note on 'Circle,' 5, says that 'some American Indian influence may be present' but makes no mention of the obvious debt to Masson. Three years after the date to which it is attributed, Pollock had some psycho-analytical sessions with a follower of Jung, and afterwards seems to have accepted the idea that his figurative



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symbols sprang from the Collective Unconscious.

Be that as it may, he was not able to do without other men's paintings until he had destroyed their images. He became progressively aggressive towards them, until there was nothing left in the paraphrases but the marks of his own destructiveness. One cannot fail to see that anger, envy and frustration produced these marks of defacement and negation, for he quite failed to make a serious contribution to figurative painting. Nevertheless to be finally confronted with a canvas covered by such marks was a kind of victory. He was in total possession of the canvas. His most remarkable work arose from the continuation of this act of negation beyond the point where there was anything left to negate.

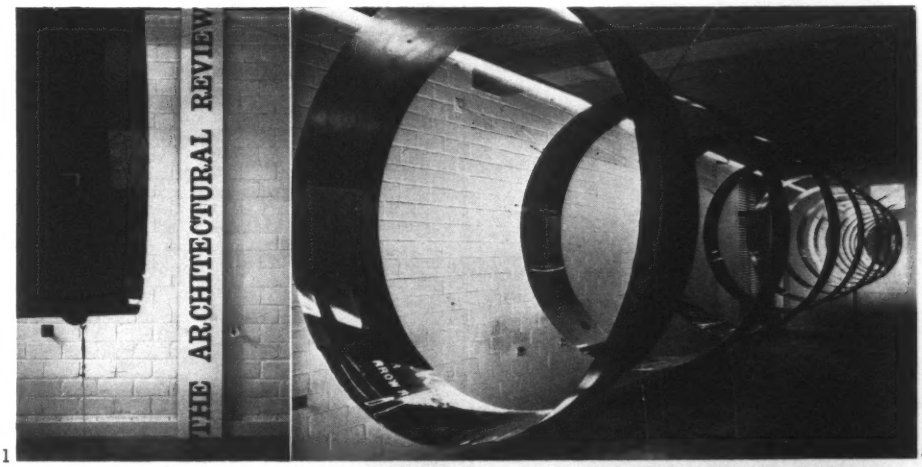
We now know that the creative act does not arise simply from noble thoughts and high motives, and that the work which stirs us most deeply often springs from the same compulsions that generate crime, and there was one painting in the Pollock show, carried out almost entirely in layers of poured black paint, 6, that is terribly intimate with chaos and yet seems to me to be supremely beautiful.

Robert Melville

DISPLAYED TYPOGRAPHY

The ARCHITECTURAL REVIEW *was recently paid the rare and distinguished compliment of being made the subject of one of the exhibitions staged by Steendruckerij de Jong,* the celebrated printers, in their works at Hilversum, Holland, 1. Held in a display-space in the works canteen, these exhibitions cover a variety of subjects connected with graphics, photography and architecture, as well as the fine arts, and are marked by great originality in choice of subject matter and display-technique—including such dadaist gestures, on occasion, as inviting a large attendance to a Christmas-party-cum-exhibition which proved to consist of three men eating a gargantuan meal—inaccessibly, on the far side of a glass wall!

The AR was shown partly in mosaics of pasted-up pages on the walls, 2, and partly in suspended rings containing a selection of typical REVIEW covers from the post-war years, 3. The exhibition was opened by the Dutch graphic designer Jurriaan Schrofer, and with a lecture by the architect Hein Salomonson, which gives an interesting picture of the image of the AR which is entertained in some quarters: 'It is tempting to go into its typically English character, but I don't think that is at all necessary. Each number begins with a general subject, as general



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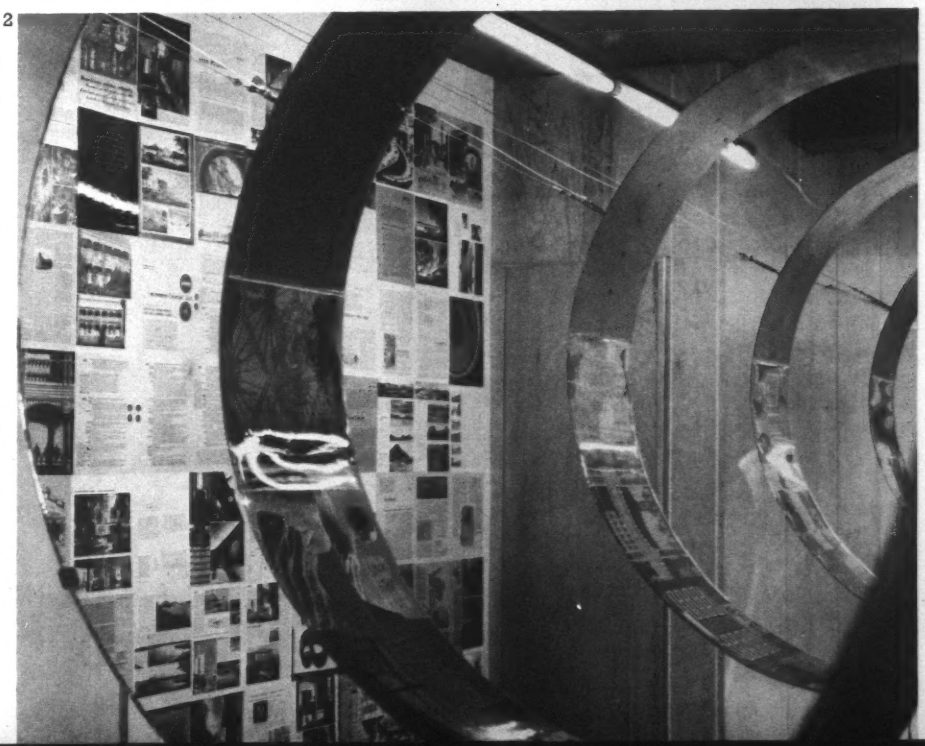

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as possible, which shows—quite justly—how catholic an architect's range of interests and ideas must be and can be. You might find an article by some chap who has driven right across the USA and hardly mentions architecture. . . . In AR there is a frequently recurring discussion, the point of which escapes me, on New Brutalism. Among the many positive comments I have to make, I should like to mention one thing I have an objection to: it is especially easy, in this general section, to take a high-handed attitude. It is my belief that we architects are right in being unwilling to exaggerate, and in drawing comparisons based on New Brutalism, AR seems to me to go too far in this respect. . . . It is very remarkable how these very critical, outspoken and pungent articles are usually followed by one or more architectural works; these are topical, sometimes—it is true—accompanied by a criticism, but it is a good thing the choice isn't too fastidious. The editors just show us what is being made at the moment and add their comments . . .'

Sharp-eyed readers who examine the photographs closely, will see that de Jong's choice was not too fastidious either, and includes the kind of article to which Salomonson objected, as well as those he approved.

Q.S.C.

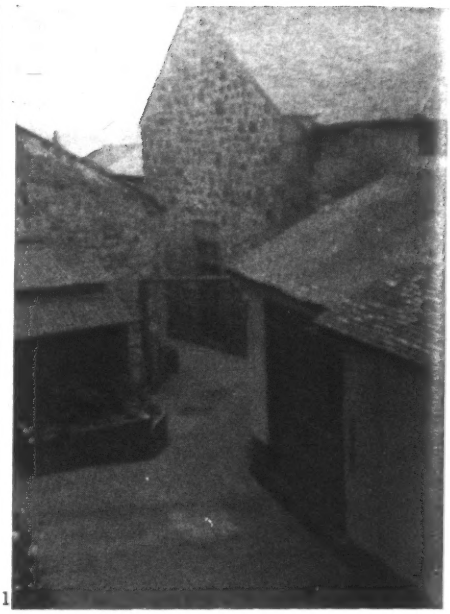
HISTORY

A GEORGIAN THEATRE AT PENZANCE

Our lack of knowledge of the state of the provincial theatre in England in early Georgian times is not really surprising. A few plays performed each year in a barn or in an inn yard was often all that existed, but, as the eighteenth century wore on, other more substantial permanent theatres began to arise, until, at the end of the Georgian period, there were few towns without a permanent theatre open for at least part of the year. Provincial life was now less dull.

The theatre at Penzance, here publicised for the first time since it closed its doors 120 years ago, was one of these structures, and it is still to be found as a garage in the inn yard of the handsome Union Hotel in Chapel Street. The theatre was probably opened in the year 1787 by a man—an important and interesting man—from Birmingham called Richard Hughes. As a youth he made his first appearance on the stage of the theatre at Coventry where he appeared as both painter and performer. 'His good fortune' is said to have conducted him to Plymouth Dock, where he met and married a Miss Williams, daughter of the manager of the theatre there, and before he died in December, 1814, revered as the Father of Provincial Drama, he had become manager of the theatres at Sadler's Wells, Weymouth, Plymouth, Exeter, Guernsey, Devonport and Truro. Each theatre was open for at least several months of the year, and as each play in their repertoire was performed they moved on from one theatre to another. In 1804 Hughes negotiated with Fisher, the proprietor of the Falmouth theatre for a merger of interests, and by 1810 performances at Truro were given under the joint management. In a three months' season they produced over seventy plays. Mr. Hughes, junior, who had appeared on his father's stage at Penzance as early as 1787, remained in theatre business for many years and in 1821 went into partnership with two others for the purchase of Vauxhall Gardens for £50,000.

The entertainment business in Georgian times seems to have been a far more



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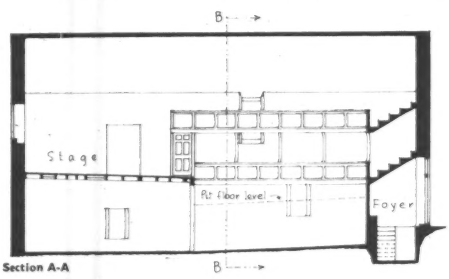
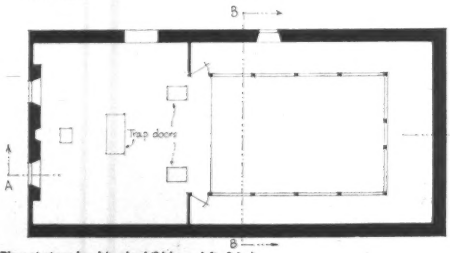
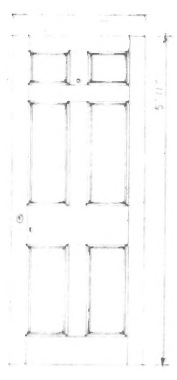


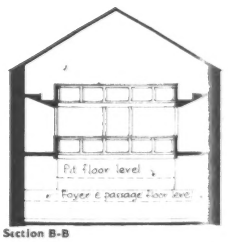
Section A-A



Plan at stage level (scale: 1/24 in. = 1 ft. 0 in.)

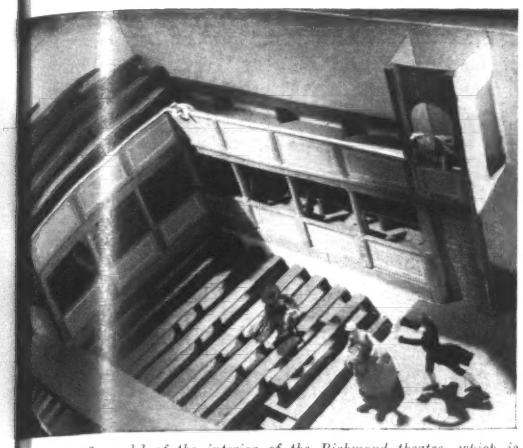


Proscenium door (scale: 1/3 in. = 1 ft. 0 in.)



Section B-B

1, distant view and, 2, close-up view of what survives of the Penzance theatre.



3, *model of the interior of the Richmond theatre, which is identical to the one at Penzance.*

lucrative and highly organized business than we have hitherto suspected.

Nothing much survives of the architecture of any of these buildings save for the beautiful Adam-style front of the theatre at Truro. At Penzance we have rather more, a building which has repaid careful archaeological examination. What this examination has revealed is that the Penzance theatre and the theatre at Richmond, hundreds of miles away in Yorkshire, were virtually identical in size, design and plan. One person must have designed both. The building is a simple rectangle 60 ft. by 29 ft. with a stage 21 ft. deep. Originally it had galleries with blue and white painted panelled fronts on three sides, of which remains of two survive. The drawings reproduced here, prepared by Mr. Dalton Clifford in consultation with me, show quite clearly what this eighteenth-century playhouse looked like. The theatre itself has, refixed elsewhere, one of the original proscenium doors from the stage, of which the only other recorded example is at Stamford in Lincolnshire. Although much altered, the Penzance theatre is one of the most complete eighteenth-century theatres to survive, and it could be completely restored to its original state without necessitating any really conjectural restoration.

The first play-bill that has come down to us is reproduced here. It is for a performance on June 20, 1787, of *The Duenna or the Double Elopement*, *The Fable of the Old Man, his son and Ass*, a song by Mr. Bennett, and *Patrick—Prussia, or Love in a Camp*. Mr. Hughes, Mrs. Hughes, Mr. B. Hughes and Master Hughes all appeared in the cast, a really close family affair. Succeeding years saw a great variety of performances, including much Shakespeare, patriotic pieces like *John Bull, or an Englishman's Fireside* and things like *Blue Beard*, *The West Indian*, *Speed the Plough* and *Pizarro*. Doors generally opened at 6 o'clock, the performance began at 7 and half price admittance was allowed at 8.30. Prices were 3s. for boxes, 2s. for the pit, and 1s. for the gallery.

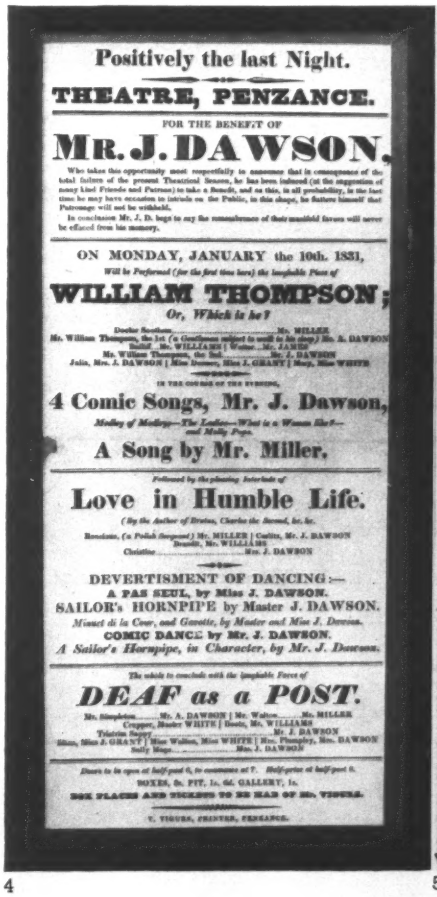
In 1805 the theatre was an onlooker when, in the beautiful still-existing Assembly Room attached to the Hotel, the first public announcement of the victory at Trafalgar was given out. Apparently a Penzance fishing boat intercepted the schooner *Pickle* at sea and obtained the intelligence. The news was given to the assembled throng amid scenes of great excitement.

In June, 1812, the Penzance players took part in one of the earliest recorded foreign tours for an English company. They embarked on the sloop *William* at Penzance for the purpose of sailing to Portugal to entertain members of the forces engaged with Wellington in his campaign in Spain. Some of them stopped on the way in the Scilly Isles, the first time that regular actors had ever been there. The following January their mission in Portugal had been completed 'not lately receiving that encouragement they so well merit.' The forces had been entertained, but commercially the tour had been a flop. Their return journey was in a transport.

Hughes died in 1814 and Samuel Fisher in 1816 and from then on the theatre was run by an actor called Osbaldeston and another actor, James Dawson, who had appeared on the stage here in his earlier days. Dawson was assisted by his son. The immediately following years saw a similar series of plays and melodramas, but they tended to become more and more spectacular as the years went by. Falling rocks, torrents of water, hogsheads of fire, smoke, thunder and lightning and other sensations were much in demand. On June 15, 1819, the famous fire-eating expert Chabert appeared and gave a highly realistic exhibition enlivened by fireworks and rockets. Unfortunately the theatre was filled with flames and smoke; there was panic and the audience rushed for the doors. Apparently the hole cut in the roof to allow the fumes to escape had not been adequate.

Plays recorded from these later years still include many Shakespearean productions. Keene, the African Roscius appeared in *Othello* in August, 1826, and the following week Weber's *Der Freischütz* was performed. The *Royal Cornwall Gazette* often carried advertisements of the performances at this time; times and prices remained constant. However, public opposition to theatrical performances was growing in the provinces and audiences were dwindling. Comfort and amenities, too, had not been all that could be desired. 'One evening when playing Hamlet,'

4, *play-bill for the closing night*; 5, *play-bill of* 1787.



Positively the last Night.

THEATRE, PENZANCE.

FOR THE BENEFIT OF

MR. J. DAWSON.

Who takes this opportunity most respectfully to announce that in consequence of the total failure of the present Theatrical Season, he has been induced (at the suggestion of many Kind Friends and Patrons) to take a Benefit, and as this, in all probability, is the last time he may have occasion to intrude on the Public, in this shape, he flatters himself that Patronage will not be withheld.

In conclusion Mr. J. D. begs to say the remembrance of their manifold favors will never be effaced from his memory.

ON MONDAY, JANUARY the 10th. 1831,

Will be Performed (for the first time here) the laughable Piece of

WILLIAM THOMPSON;

Or, Which is he?

Doctor Bendo ..... Mr. MILLER

Mr. William Thompson, the 1st (a Gentleman subject to sniff to his sleep) Mr. J. DAWSON

Rashif ..... Mr. WILLIAMS | Waiter ..... Mr. JAMES

Mr. William Thompson, the 2nd ..... Mr. J. DAWSON

Julia, Mrs. J. DAWSON | Miss Bennett, Miss J. GRANT | Mary, Miss WHITE

IN THE COURSE OF THE EVENING,

4 Comic Songs, Mr. J. Dawson,

Medley of Medleys—The Ladies—What is a Woman like?—and Molly Pope.

A Song by Mr. Miller.

Followed by the pleasing Interlude of

Love in Humble Life.

(By the Author of Brutus, Charles the Second, &c. &c.

Bonaduca, (a Polish Sergeant) Mr. MILLER | Caitlin, Mr. J. DAWSON

Drandit, Mr. WILLIAMS

Christine ..... Mrs. J. DAWSON

DEVERTISMENT OF DANCING:—

A PAS SEUL, by Miss J. DAWSON.

SAILOR's HORNPIPE by Master J. DAWSON.

Minuet de la Cour, and Gavotte, by Master and Miss J. Dawson.

COMIC DANCE by Mr. J. DAWSON.

A Sailor's Hornpipe, in Character, by Mr. J. Dawson.

The whole to conclude with the laughable Farce of

DEAF as a POST.

Mr. Simpleton ..... Mr. A. DAWSON | Mr. Walton ..... Mr. MILLER

Cropper, Master WHITE | Hoole, Mr. WILLIAMS

Tristrim Penny ..... Mr. J. DAWSON

Miss, Miss J. GRANT | Miss Walton, Miss WHITE | Mrs. Plumpley, Mrs. DAWSON

Sally Sage ..... Mrs. J. DAWSON

Doors to be open at half-past 6, to commence at 7. Half-price at half-past 8.

BOXES, 3s. PIT, 2s. 6d. GALLERY, 1s.

BOX PLACES AND TICKETS TO BE HAD OF Mr. TIDDEL.

T. TIDDEL, PRINTER, PENZANCE.

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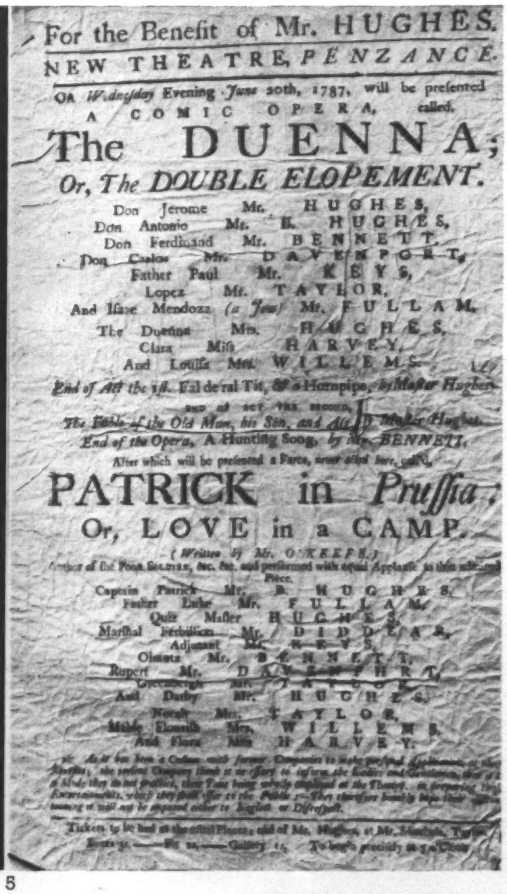


For the Benefit of Mr. HUGHES.

NEW THEATRE, PENZANCE.

On Wednesday Evening June 20th, 1787, will be presented

A COMIC OPERA, called

The DUENNA;

Or, The DOUBLE ELOPEMENT.

Don Jerome Mr. HUGHES,

Don Antonio Mr. B. HUGHES,

Don Ferdinand Mr. BENNETT,

Don Carlos Mr. DAVENPORT,

Father Paul Mr. KEYS,

Lopez Mr. TAYLOR,

And Isaac Mendoza (a Jew) Mr. FULLAM,

The Duenna Mrs. HUGHES,

Clara Miss HARVEY,

And Louisa Mrs. WILLEMS.

End of Act the 1st. A Federal Tit, or a Hornpipe, by Master Hughes.

AND AT ACT THE SECOND,

The Fable of the Old Man, his Son, and Ass, by Master Hughes.

End of the Opera, A Hunting Song, by Mr. BENNETT.

After which will be presented a Farce, never acted here, called

PATRICK in Prussia;

Or, LOVE in a CAMP.

(Written by Mr. O'KEEFE.)

Captain Patrick Mr. B. HUGHES,

Father Luke Mr. FULLAM,

Quiz Master HUGHES,

Marshal Bertillion Mr. DIDDEAR,

Adjutant Mr. KEYS,

Oliver Mr. BENNETT,

Rupert Mr. DAVENPORT,

Grenadier Mr. TAYLOR,

And Darby Mr. HUGHES,

Norah Mrs. TAYLOR,

Maid Elenah Mrs. WILLEMS,

And Flora Miss HARVEY.

As it has been a Custom with former Companies to make presents to the Members, the present Company think it necessary to inform the Ladies and Gentlemen, that if a Benefit they do not profit, their Fate being wholly confined at the Theatre, in preparing the Entertainments, which they fully rely on the Public.—They therefore humbly hope their Patronage will not be deprived either to Neglect or Disrespect.

Tickets to be had at the usual Places, and of Mr. Hughes, at Mr. Hoskin's, Turner Street.

Boxes 3s. ——— Pit 2s. ——— Gallery 1s. To begin precisely at Six o'Clock.

5

Dawson tells us, 'a most laughable contretemps occurred in that awe-inspiring scene when the hair doth stand on end like quills upon the fretful porcupine and the most solemn part where Hamlet conjures Horatio and Marcellus "never to speak of this that they had heard" and to "swear by his sword," the ghost, who was in the stable immediately under the stage, had just reiterated the mournful adjuration "swear"! when the ostler roared out with stentorian lungs "Come up, you b-g-r, or I'll scat out the brains of tha !" '

The sands of time were now running out fast. The engagement of The Young Roscius (W. R. Grossmith) then nine and a half years old, who portrayed no fewer than thirty-four characters, enlivened the July of 1828, and in August the theatre probably enjoyed the greatest experience in its forty years' existence when the actor Edmund Kean honoured the theatre by performing there. This was part of a tour which included visits to Ashburton, Falmouth and Exeter, and the play was *The Merchant of Venice*.

On January 10, 1831, the theatre may have opened for the last time. It was a benefit for Mr. Dawson and the play-bill announced that 'In consequence of the total failure of the present theatrical season, he (Dawson) had been induced to take a benefit . . . as this—in all probability is the last time he may have occasion to intrude on the public. . . .' By 1839 the theatre had been dismantled and, in order to provide a stage for another child prodigy, '11-year-old Master B. Grossmith,' a fit-up had to be built in the adjoining assembly room. The theatre in Penzance was dead.

Today, the building lies forgotten and lonely and it takes an experienced theatre historian to detect its real interest. How exciting it would be if this forgotten series of stock rooms and garages could be restored into the Georgian theatre it is.

Derek Sherborn

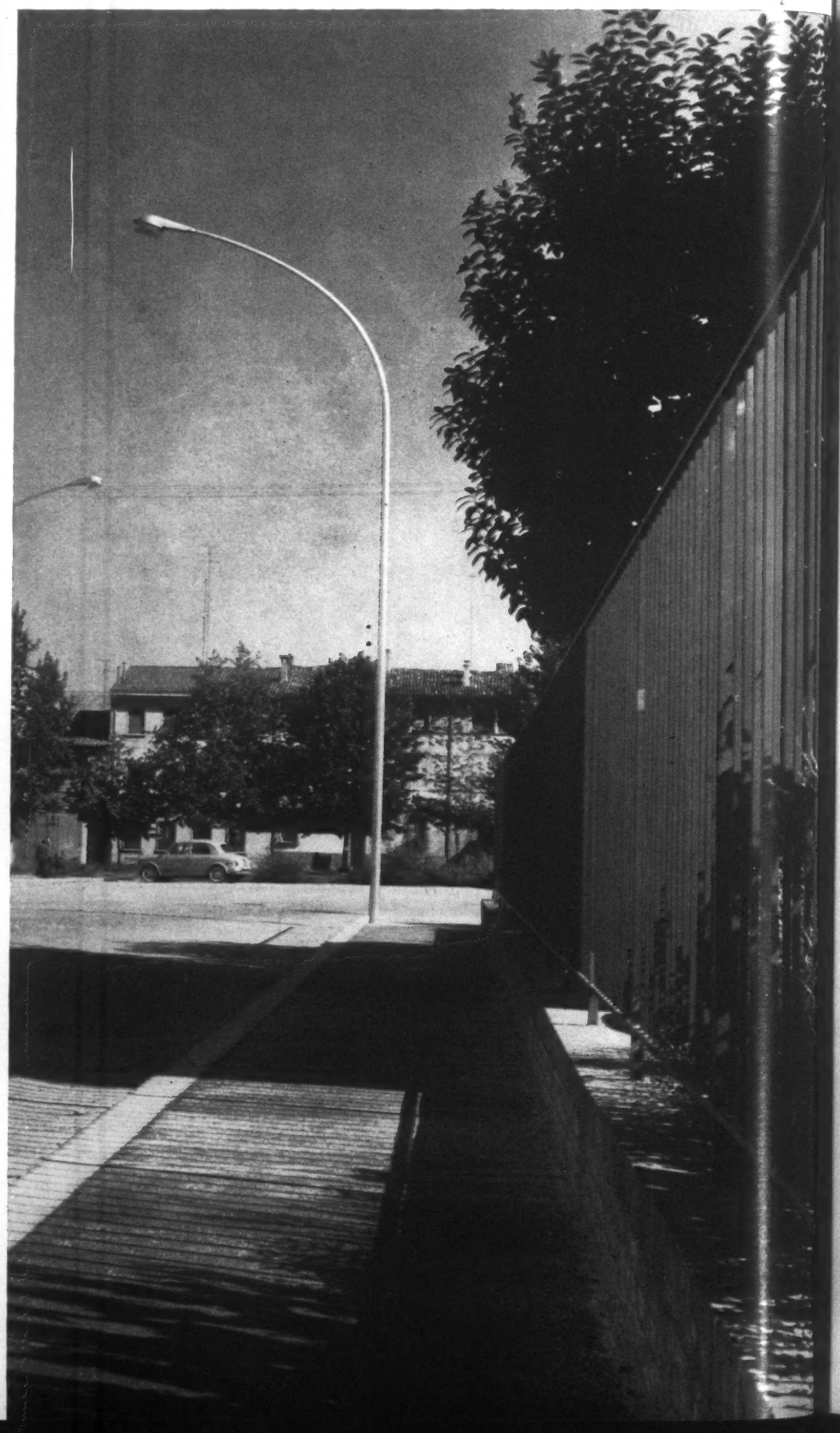
The writer wishes to express his indebtedness to the following for their kind assistance: Miss Biddiss, the Union Hotel; Mr. Dalton Clifford, Penzance; Miss Chirgwin; Dr. Richard Southern; Mr. J. A. D. Bridger; Dr. Todd; Miss Sybil Rosenfeld; and the Librarians of Harvard University, Islington, Plymouth, Exeter, Truro, and Penzance, The Enthoven Theatre Collection in the Victoria and Albert Museum, and the trustees of the Morrab Library, Penzance.

LAMP-POSTS

AT HOME AND ABROAD

Anyone who has been about on the Continent will probably have noticed in some places the exceptional grace, slimness and tallness of the street-lamps, especially on trunk and through roads, and wondered why we so rarely seem to achieve a similar effect in Britain. Some of these willowy continental 'whips' become mannered and self-conscious, with a tiny blob lantern dangling inconsequentl at the end of a long neck, but the best c them, aided perhaps by clear sky, broa streets and light buildings, attain a mos

Are the 30- and 35-foot steel lamp-posts that light Continental roads, such as 1 in Bergamo, Italy, better designed than our ow At first one is tempted to say yes unconditionally. But a scrutiny of designs now coming on to the market in Britain is mo reassuring than one had feared. Some British manufacturers are taking pains to meet the challenge of the motorway and t clearway. The responsibility now lies more with the local authorities who choose designs.



satisfying beauty. It is rarely one can say the same on our own roads. Solidity, utility, yes. Decency, quite often. But beauty, hardly ever. Why?

It is easy to assume the reason is official British conservatism, unimaginative rule of thumb, and the British habit of always expecting the worst, of making everything three times as thick and stout as need be, just in case a travelling circus piles up against a lamp-post once in twenty years. I think there is something in that—too many borough engineers dearly love a herculean steel standard against which cars can smash themselves and their passengers without the lamp turning a hair, whereas the less uncompromising columns don't necessarily kill when you hit them. But after examining a number of official and unofficial attitudes to this particular problem in design, I believe there is more to it than this.

First, at government level. There is no Ministry of Transport objection to 30-foot steel lamp-posts like those common in Italy provided they reach the Ministry's required standards of lighting efficiency. The Ministry is concerned only with technical efficiency of street lamps. It leaves questions of design to be thrashed out by local authorities (if they can be bothered) with the Council of Industrial Design, the Royal Fine Art Commission and the ratepayers (if they are consulted at all). The aesthetics of siting and grouping are the province of the Ministry of Housing and Local Government. At government level the direct encouragement of good design of street furniture is precisely nil. The only indirect control is that the grants given by the Ministry of Transport to local authorities for the lighting of A-class roads are subject to approval of the designs. This has resulted in some improvement, as a result of the Ministry taking the Royal Fine Art Commission's advice on what should be approved. But the government could do much more. It produces model manuals and circulars to demonstrate principles of housing layout and tree planting; why not for the design and grouping of street furniture?

At local authority level, there are admittedly some problems. A very slender equipment may involve housing the control gear up by the lantern. But in London the London Electricity Board insists on cutouts and time switches of a size that can only be accommodated in the base of the column or under the pavement unless

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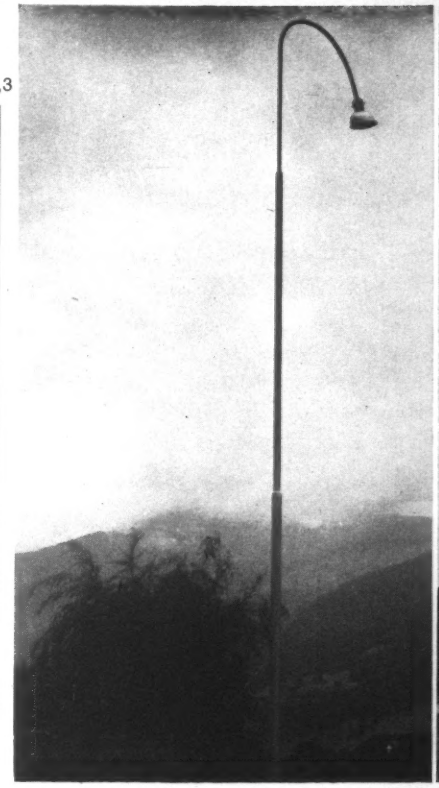
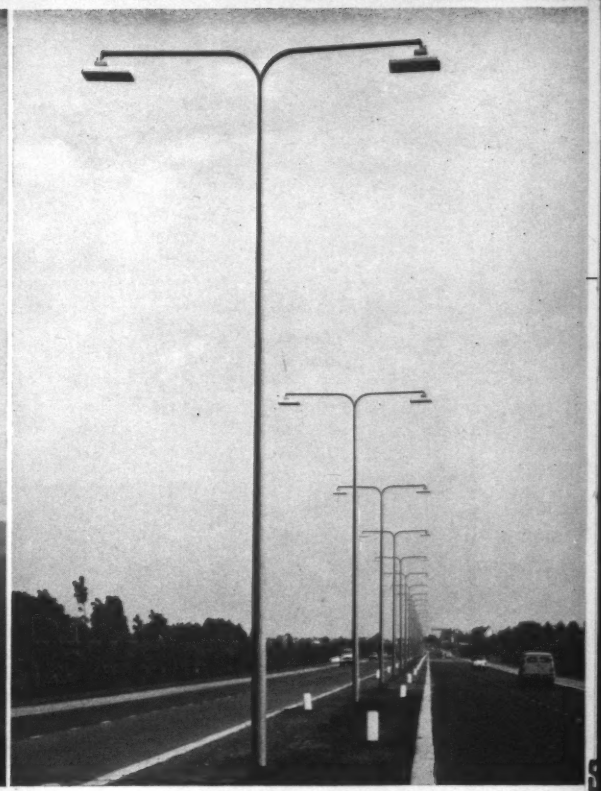
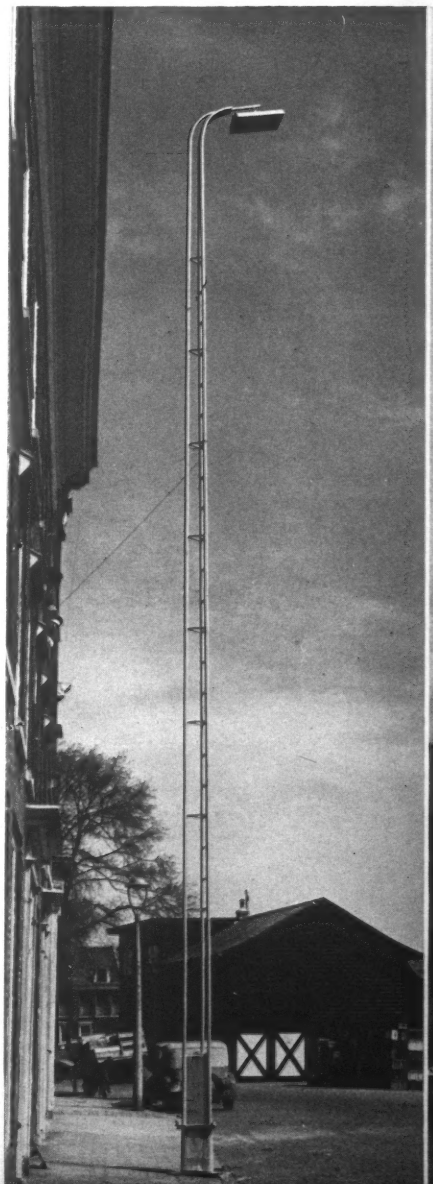
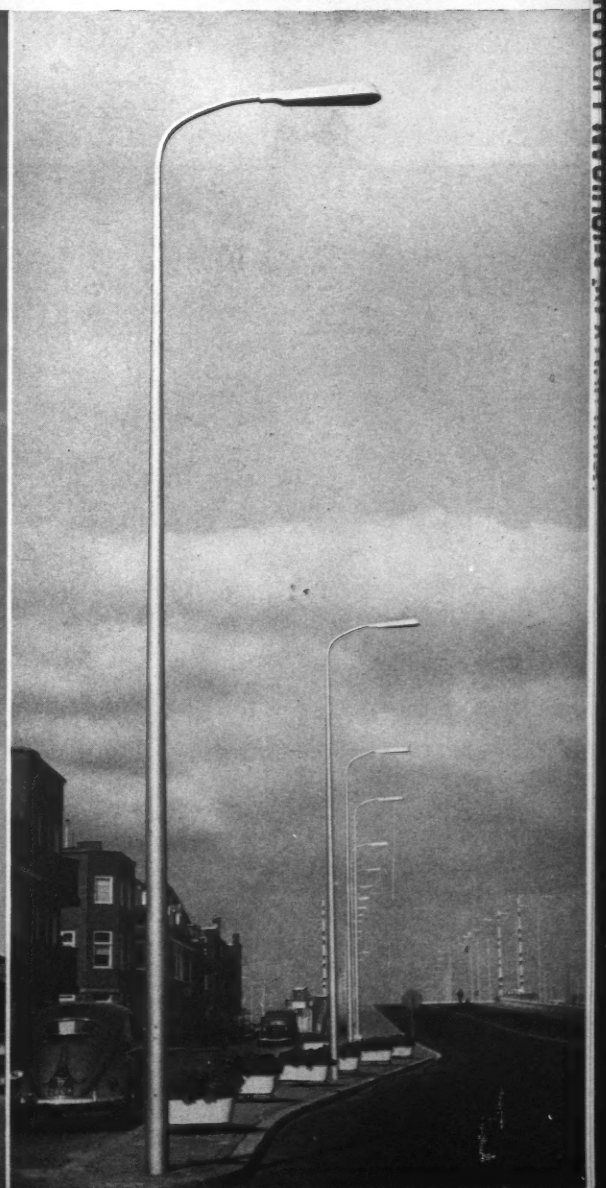


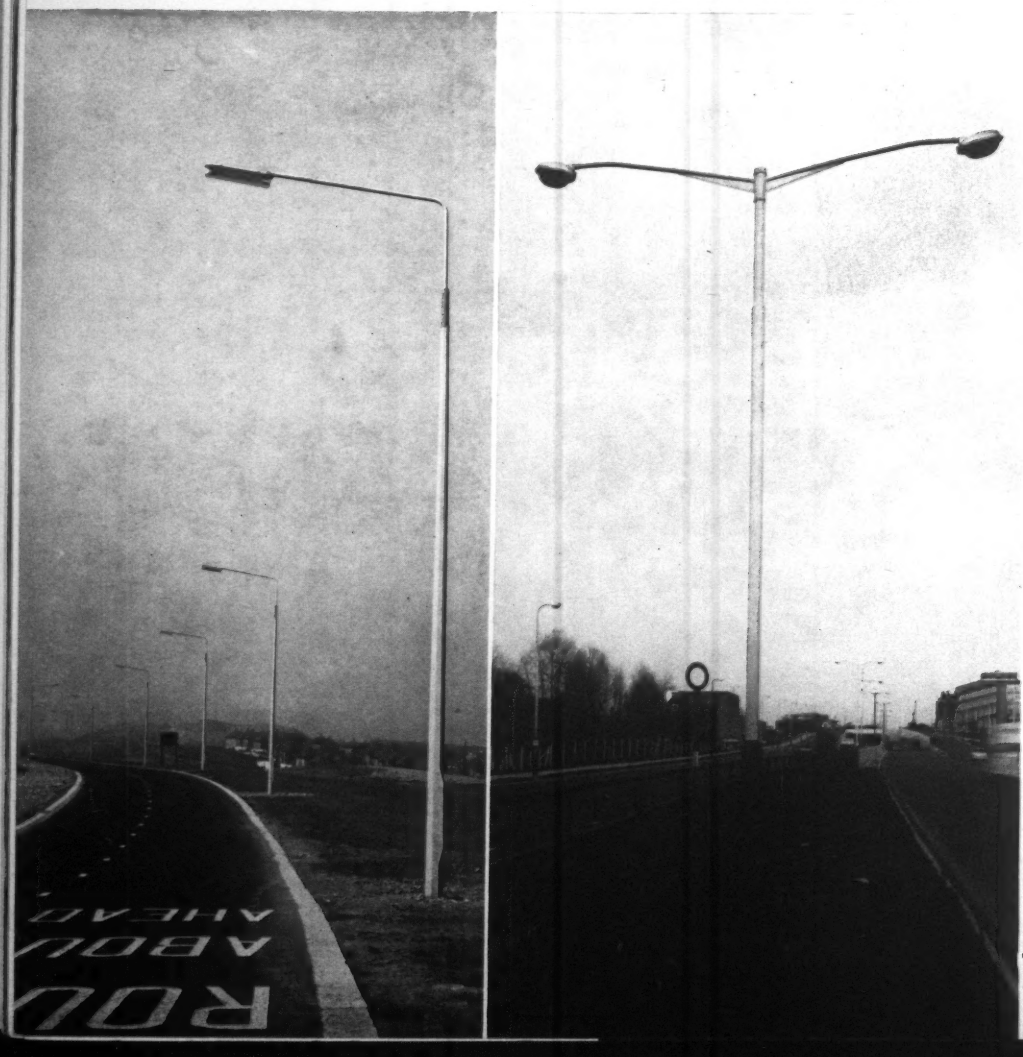






A group of typically slender Continental lamp-posts: The grace of the column is matched by the careful shaping of the lantern. 2, a stepped steel column, from Chur, Switzerland. The curve doesn't altogether escape the suggestion of a dying flower, but the slimness is remarkable. 3, a Dutch example, delicately tapered, used along the central reserve of a motorway. 4, another Dutch lamp-post with a built-in stepladder. 5, a Dutch example in aluminium, with columns drawn in one piece. It solves the problem of incorporating the lantern effortlessly into the design.

4,5



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these pieces of mechanism are radically redesigned. Other Electricity Boards do not necessarily enforce this, but local authorities fight shy of such a design because it makes maintenance difficult, especially where there are two separate sets of control gear. Also if the column is run into, an additional length of cable may be flopping about dangerously loose. And there is a suspicion (is this a typical British reaction to anything Continental?) that such a lamp *cannot* be quite up to British lighting standards. There's something in all this, though it can be overcome by a determined and enterprising authority.

And manufacturers: there are not many for the high mounting-heights over 25 feet. 35-foot lamps have only recently started to come on the market in this country for use on trunk roads, and inevitably it's a slow business when a new one may take over a year from drawing-board to production. The chief reason is of course that they aren't asked for much. One is back with the familiar argument. They aren't made because they aren't asked for. They aren't asked for because they're not made.

Luckily, there are some hopeful signs. Not every local authority engineer submits tamely to the restrictions imposed on him by his council with their eyes on their ratepayers. Some are fully conscious that lighting programmes have had to be pushed on ahead of progress in design and manufacture. One enlightened London borough engineer was deeply regretful that in relighting his borough he has been compelled to make do with the equipments available a decade ago when the scheme started; ever since he has had to watch excellent new designs like those shown here arrive too late. For there are some British lamps as good as most on the Continent, if only local authorities will take advantage of certain manufacturers' courage and vision and look beyond this short-sighted cheeseparing. The chief hope is that once some have taken the plunge their example will prove catching. Officials are men of like passions with us in that they too are vulnerable to fashion. Another good augury is that Wandsworth Borough Council are making available to the COID a pitch on Kingston Road, S.W.15, for 30-foot street lamps (and possibly other mounting heights too) to be on permanent exhibition.

Derek Barton

A group of recent and much improved British designs: 6, in tubular steel, by Stewart and Lloyds — the first use of this 35 ft. curved type of stepped column, resembling some of the Continental models illustrated, by Lanarkshire County Council on the Edinburgh-Lanark road. 7, in concrete: 35-ft. New Highway type column, by Concrete Utilities Ltd., with steel bracket, photographed on a Sheffield parkway. 8, in stepped tubular steel; at Hanger Lane, London, with double bracket.

7,8

SKILL

UP-AND-OVER DOORS, 1

In the course of a few years up-and-over doors have almost completely ousted side-hung doors for garages. This is the first of two articles in which Anthony Wylson considers the technical problems they raise and describes the varieties now on the British market. This month he reviews his subject and classifies half the products on the market. Next month he will complete his coverage of products and draw his conclusions.

The object of the 'up-and-over' door is to free the opening by taking the door to lintel level. To facilitate this operation the weight of the door is balanced either by counterweight or spring coil. The overhead position of the door saves the 'drive-out' from being obscured and liberates the area immediately in front of the garage. Normal hinged doors are subject to being caught by the wind causing banging and stress on the hinges. The up-and-over door is opened and closed in one operation. In most cases this cannot be obstructed by leaves or snow lying immediately in front of the garage.

The cost of up-and-over doors for domestic garage use varies from £20 to £30, similar to sliding doors of the same size, whereas hinged doors would be in the order of £10.

It is possible to obtain either a complete unit consisting of door and gear or just the overhead door gear. There are standard units for domestic garages at economic prices, but the larger units are purpose made with standard gear adapted to a particular door weight.

Gear

There are two main systems of balancing the weight of doors; counterweight and spring coil.

The counterweight system is achieved by using either a lever arm or pulley system. In the first case the lever arm is an integral part of the door gear. In the second case, the counterweight can either be placed by the jambs of the door opening or on a side or rear wall. This gives a choice in side clearance requirements and the system can be developed in relation to a particular plan. The counterweight can be adapted to the weight of the door unit.

The spring coil system depends upon balancing the weight of the door against coil spring tension. This gear is less bulky than the pulley system and has fewer moving parts for maintenance. At the same time, the tension of the coil must not only be suited to the door units, but requires occasional adjustment. With up-and-over doors the spring coil is situated alongside the jamb or lintel or, as in the case of the Acrow unit, it is fixed to the side wall. Roller shutter gear accommodates the balancing spring within the roller.

Most gear incorporates a track of some form to guide the path of the door. Ball bearing runners, nylon or steel wheels attached to the side of the doors, move along steel tracks either adjacent to the jambs or projecting inwards at lintel level. The adjustment and maintenance of this element is very important for the smooth running of the unit.

Two important factors to be considered in selecting gear are (1) the path taken by the door while it is being opened and (2) the 'open' position. It is necessary to assess the amount of space available for operating the door. In some cases the path taken by the door would be all right for the average saloon car, but would not be suitable for a van or station wagon hard-pressed for room. The open position varies from projecting totally from the lintel outside the garage to projecting completely inside, lying along the underside of the ceiling. The former gives a canopy for car maintenance and leaves the garage roof space clear. The latter neither obstructs the area immediately in front of the garage, nor is it in a position to collect snow and rain when open.

Doors

Doors can be supplied as an integral part of both standard and made-to-measure units. At the same time, there are firms that specialize in garage doors. Door weight and size would be related to particular gears. The door unit is manoeuvred either as a rigid plane or, as in the case of roller doors, it becomes a flexible unit composed of narrow lathes. In individual designs and adaptations it is important to note the stresses caused by the manner of support when the door is open. Most doors have truss bracing across the span.

The majority of door construction is divided into frame and panel using steel, aluminium or timber as both structural and cladding material. Each material or combination of materials has its own advantages and suitability of cost against factors of maintenance, structural stability, weight, insulation value and appearance.

The insulation factor is of importance in some industrial uses or garages used for other purposes besides storage. Car 'freeze-up' is less of a concern today, but excessive heat loss may lead to condensation in the car engine. Nowadays the serious effect of this is overcome by the use of oil filters, but even so, in the case of emergency services, such as ambulance and fire stations, it is a point to be considered.

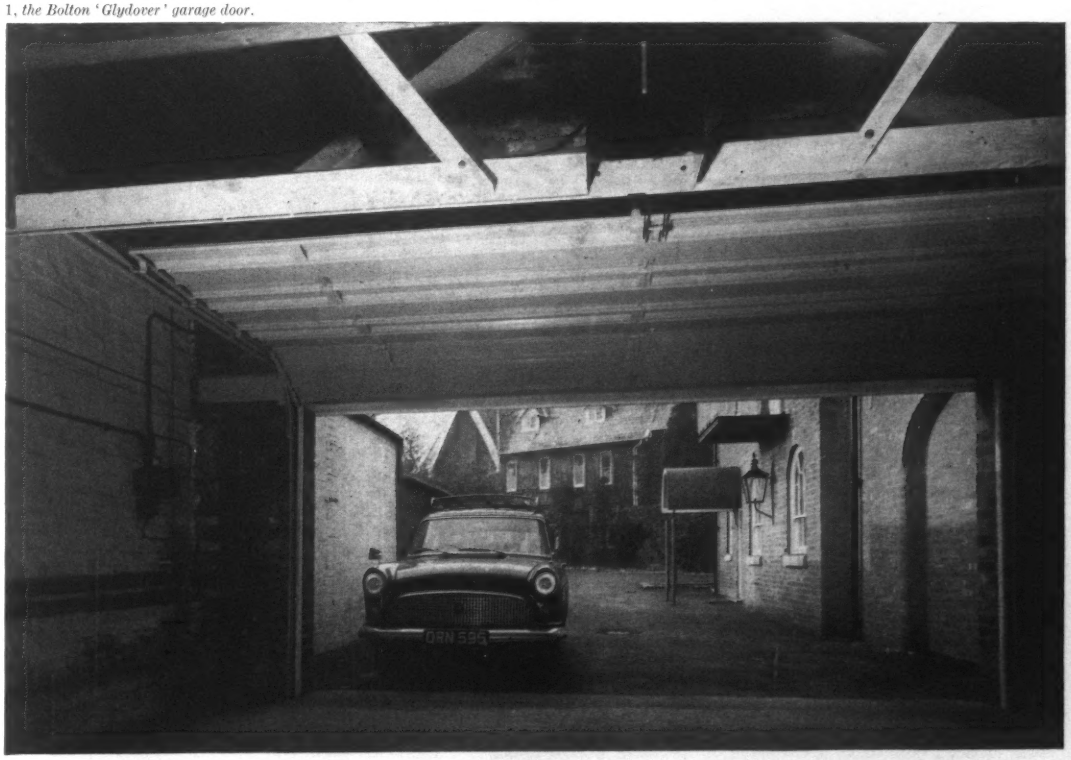
Locking systems vary, and in not all cases is it possible to unlock the door from both inside and outside. Automatic opening devices can be installed in some cases. This can be controlled from positions accessible to a driver.

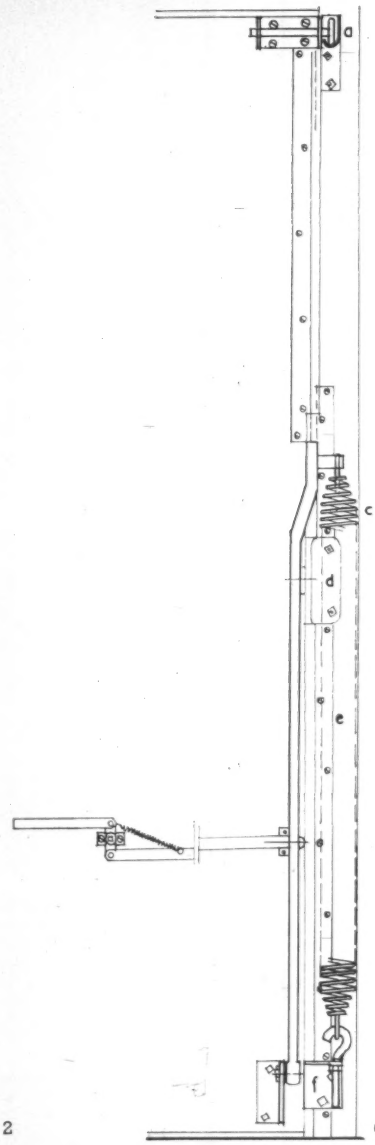
Some framed door units can incorporate glazed or perspex panels. In most units attention is given to weather-proofing along the door jambs.

Clearances

It is important to note the variety of sidewall and headroom clearances required by different units. Tension coil springs require up to 4 in. whereas the pulley and counterweight systems require up to 9 in. for small and 12 in. for large openings if the weight is situated beside the jamb. This

1, *the Bolton 'Glydover' garage door.*





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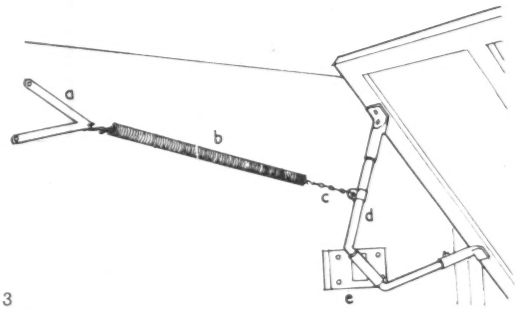

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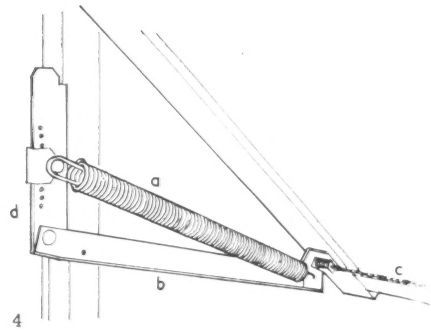

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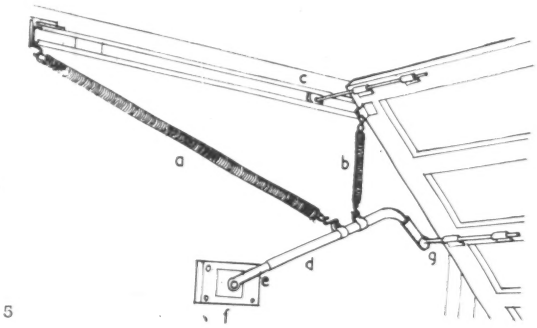

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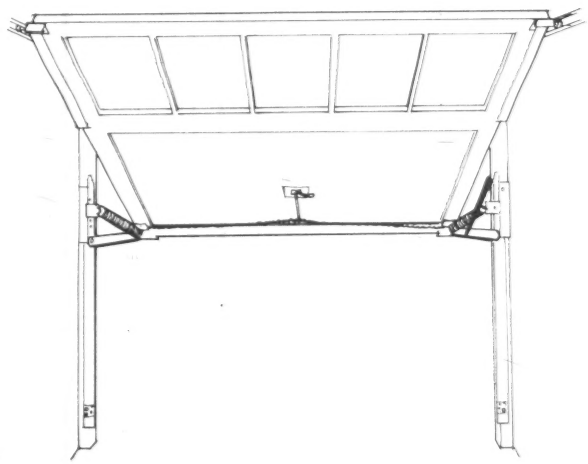


6

2. *Ellard 'Overdor' Type H showing spring coil gear against jamb with door in closed position. Weather strip plaster set on door above bracket connection and on frame below bracket connection. a, top track and door roller; b, door weather strip; c, tension spring; d, centre pivot, bracket and lever; e, jamb weather strip; f, spring anchor bracket.*

3. *Acrow Model No. 1: spring coil gear without track. a, 'V' plate; b, spring; c, connecting chain; d, hinged bracket; e, pivot and wall plate.*

4. *Batley's 'Suparise': spring coil from jamb to lower rail of door. a, spring; b, bracket; c, latch chain; d, pivot and spring coil adjustment.*

5. *Acrow Model No. 2: double coil and horizontal track. a, large spring; b, small spring; c, wheel and horizontal track; d, bent arm; e, extension to arm; f, wall plate and pivot; g, door pivot.*

6. *Batley 'Suparise' showing opening operation on horizontal tracks at hatch level.*

7. *Brady Rolling wood doors: section of shutter.*

8. *Brady Rolling steel doors: section of shutter.*

9. *Batley 'Suparise' door conversion with angle section mild steel stiffeners.*

sidewall clearance can be reduced to 3½ in. if the weight is situated near the rear wall.

Headroom clearance is affected by both the gear and the path taken by the door. Extra space is required for motor control. Headroom for small openings is mostly under 4 in. except for the ACROW model 1 and roller shutters.

Generally, the height of the opening is not greatly diminished by the 'open' position of the door. However, in the case of the Westland 'WELL-FOLD,' clear height of the opening is reduced by 9 in.-12 in. according to the size of the door, when it is in the open position.

The table on page 140 shows a representative selection of units to give some idea of prices and variety.

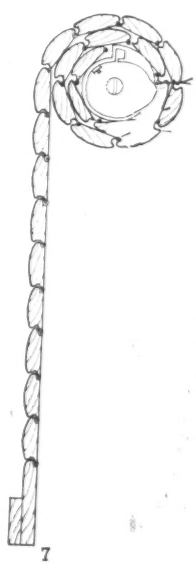
Examples

Two methods of up-and-over fittings, models 1 and 2, are manufactured by ACROW (Engineers) Ltd., priced at £11 15s. and £12 18s. 6d. Both models are suitable for doors weighing up to 250 lb. ACROW also produce metal doors from 6 ft. 6 in. by 7 ft. at £15 11s. 8d. to 7 ft. by 7 ft. 6 in. unit at £17 1s.

In both cases the gear is completely clear of the lower section of the garage wall. Model 1 consists of a U-shaped arm attached to the door and pivot-fixed at a position inside the flanking wall. Model 2 is a similar principle, but the top edge of the door moves along a guide at lintel level and fixed to the flanking wall. Both systems are balanced with springs. Model 1 requires 16 in. clearance and model 2 requires 2 in. clearance above the underside of the lintel. Adjustment to coil tension can be achieved by sliding the coil clip along the pivot arm. The ⅜ in. gap between door and frame is covered by draught strip placed inside the garage.

AUSTINS of East Ham manufacture units of three standard sizes for £17 19s. using Henderson's ULTRA overhead door gear. Austin also produce standard stock doors and frames from pattern 3PX, 7 ft. by 6 ft. 6 in. by 2 in., at £7 11s. 3d., to pattern 16XG, 7 ft. by 7 ft. by 2 in. at £14 5s., also 3 in. by 3 in. deal frames at 40s. 6d. per set, cylinder locks at 35s., and door braces to give additonal strength at 8s. 6d. per pair.

The BATLEY up-and-over door is manufactured by Ernest Batley Ltd., of Coventry. This unit is balanced by a lever arm counterweight that is accommodated along one wall adjacent to the doors. This requires a clearance of 2 in. A 3 in. clearance is required behind and above the door



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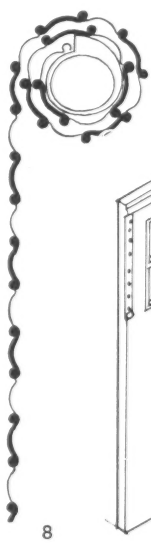

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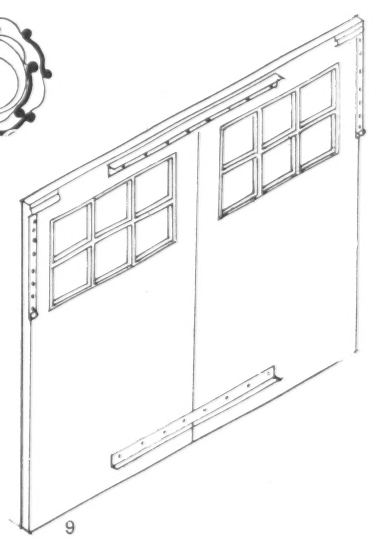

9

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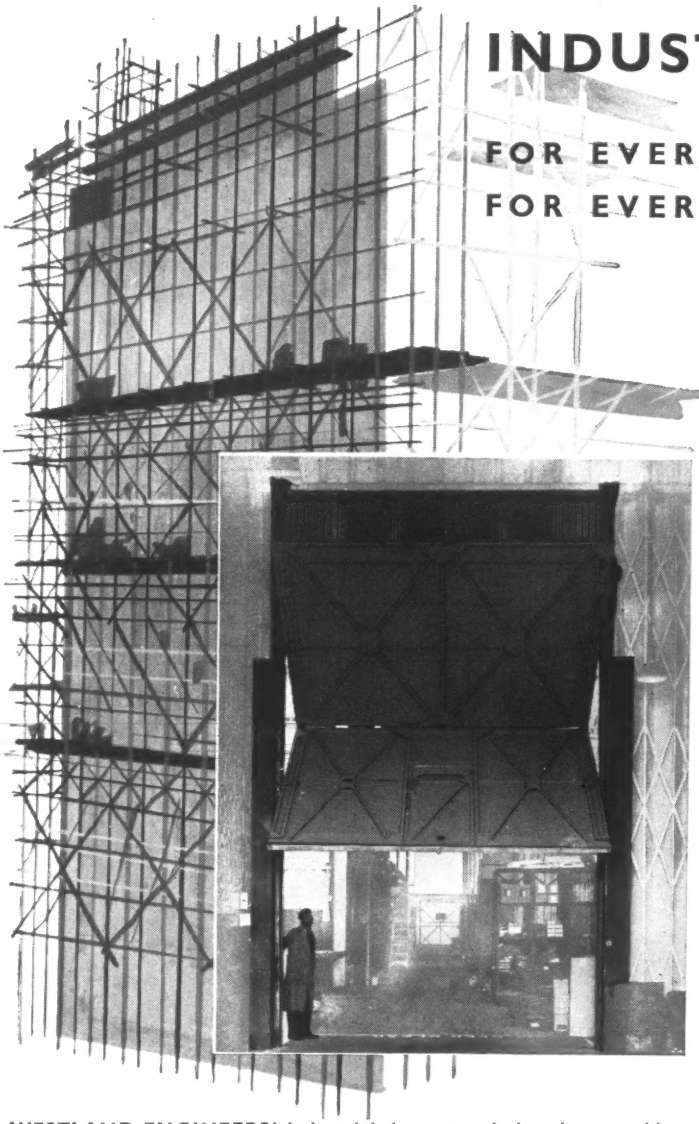

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NEW WELFOLD

As the Welfold rises into the open position it also folds along its horizontal centre line so that in its fully open position the two panels are folded together underneath the lintel, half in, half out of the building. The advantages of this arrangement with very high doors is obvious.

WELLIFT

The Wellift is a one piece overhead door, opening upwards and inwards, so that in its fully open position, half the height of the door projects outwards to form a canopy shelter.

WESTLAND ENGINEERS' industrial doors use no overhead tracks and installations can be made where the fitting of such tracks would be difficult. These doors can be supplied in either steel or aluminium construction and are fully counterbalanced. They can be fitted with electrical operation if required.

FOR FURTHER INFORMATION PLEASE WRITE TO :

WESTLAND ENGINEERS LIMITED

Offices at London, Birmingham and Manchester

HENDFORD YEOVIL SOMERSET

head. The top section of the door is guided along side tracks to give an open position completely within the garage, with a maximum projection externally of 2 ft. 10 in. The door unit is in aluminium alloy riveted and bolted, and is panelled in either aluminium alloy or exterior grade mahogany plywood. Fixings, brackets and tracks are in steel. The prices vary in aluminium from £20 for 7 ft. 5½ in. by 6 ft. 3 in. to £20 12s. for 8 ft. 1 in. by 6 ft. 3 in., and in plywood from £19 to £20 10s. respectively.

The 'SUPARISE' is also manufactured by Ernest Batley Ltd. and is suitable for openings 6 ft. to 8 ft. in height and width, and doors up to 200 lb. weight. Clearance behind jambs is 3 in., and 2 in. above and behind door is required. The gear is of steel angles, and tempered steel springs and doors in aluminium and cedarwood. Price for gear only is £11 10s. The gear is designed to form weather-proofing to jamb-door junction.

The BRADY roller shutter doors cost from £23 10s. for 7 ft. 5½ in. by 6 ft. 3 in. to £39 7s. 6d. for 9 ft. by 7 ft. They can incorporate timber lathes with steel or aluminium alloy as an alternative. Plastic windows can be inset into the doors. Counter balance is achieved by helical springs and units can be hand or electrically operated. Roller units require up to 16½ in. headroom clearance.

The Bolton 'GLYDOVER' is an interesting innovation replacing a rigid door unit with a more flexible metal panel. This is made up of galvanized sheet sections connected with sherardized steel hinges spanning the full width to the tracks at each side. The weight is balanced with a spring accommodated at high level making it particularly safe. The minimum headroom required is 12 in., and 4 in. is required either side. The unit can be up to 16 ft. 6 in. wide by 12 ft. high. The standard size, 8 ft. by 7 ft., costs £28 including draught strip. 'Glydover' can be supplied with various systems of automatic operation, and toughened glass windows can be included for an extra 30s. each.

Another roller shutter type over unit is the BOOTH weather-proof rolling shutters. The laths are of galvanized steel and the helical spring counter balance is set within the cylindrical steel barrel. The system is suitable for openings up to 34 ft. high and 25 ft. wide. Large units are operated by means of worm reduction gear with sherardized hand chains.

CURFEW over-doors of Curfew Doors and Shutters Ltd., Manchester, incorporates a high-level track and pulley counterbalance. The open position leaves a section of door projecting outside garage. There are no standard sizes but the gear for an opening 6 ft. 6 in. by 7 ft. 6 in. is estimated at £19 and for an opening 10 ft. by 15 ft. at £45. Curfew Doors and Shutters Ltd. also manufacture rolling doors with helical spring counterbalance. The system will extend to a maximum width of approximately 40 ft. and maximum area of 1,000 sq. ft. The rolling mechanism can be fitted either inside or outside or within openings.

Ellard's 'OVERDOR' unit is manufactured in two sizes, 'L' and 'H.' The first is for doors of 60 to 130 lb. and the gear costs £12. The second is for doors of 130 to 200 lb. and costs £13 10s. Ellard's also produce standard timber doors and extras such as stiffeners and locking devices for inside and outside control. The door unit in operation is supported at all four corners.

Name of Manufacturer.	*Balance and Track position.*	*Construction.*	*Clearances and Locking System.*	*Size and Weight.*	*Prices: ex Works.*	*Comments.*
1 Acrow. Model 1 Acrow (Engineering) Ltd, South Wharf, London, W.2.	Tension spring coil. No track.	Acrow doors of interlocking pressed-steel panels.	Lintel 16" reveals 2" to 12". Not more than 6" difference between sides. Locking handles and barrel-type bolts.	From 6' 6" to 8' high. For doors up to 250 lb. weight.	Gear £11/15/0. Metal doors from £15/11/8 (6' 6" × 7') to £17/1/0 (7' × 7' 6").	Spring coil and wall-pivots secured to side walls. No tracks or runners. Open position contained within building line.
2 Acrow. Model 2 Acrow (Engineering) Ltd, South Wharf, London, W.2.	Two tension spring coils either side. Horizontal track at level of lintel.	As above.	Lintel 2" reveals 2" to 12". Locking handles and barrel-type locks.	From 6' to 8'. For doors up to 250 lb. weight.	Gear. £12/18/6. Metal doors from £15/11/8 (6' 6" × 7') to £17/1/0 (7' × 7' 6")	Wall pivots secured to side wall. Open position contained within building line.
3. Austins using Henderson 'Ultra' door gear. Austins of East Ham Ltd, London, E.6.	Tension spring coil: see Henderson.	Doors of 2" styles, rails and mountings with exterior quality resin-bonded plywood panels.	Headroom 1¼" sideroom 2¾" cylinder lock for locking or unlocking inside and outside extra.	Three standard door sizes: 8' wide × 7' high 7' wide × 7' high 7' wide × 6' 6" high. Weights 108, 95 and 90 lb. respectively.	Door and gear £17/19/0.	Lock and Espagnolette bolt 35/- extra.

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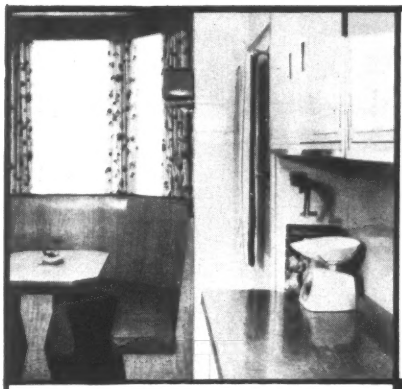

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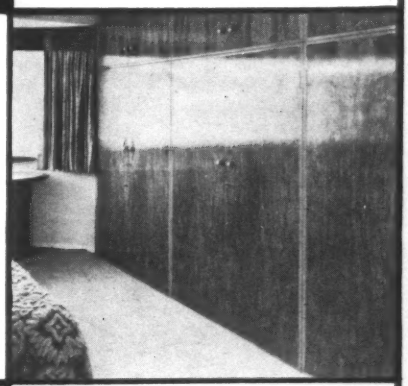

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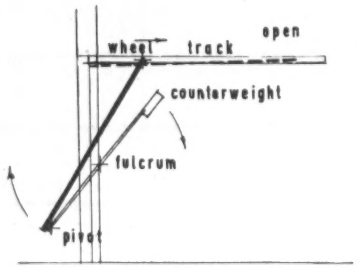
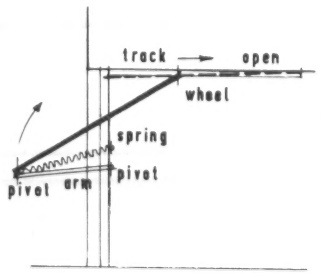
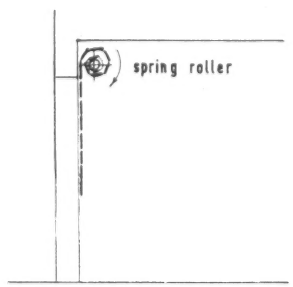
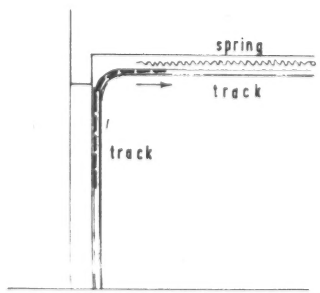
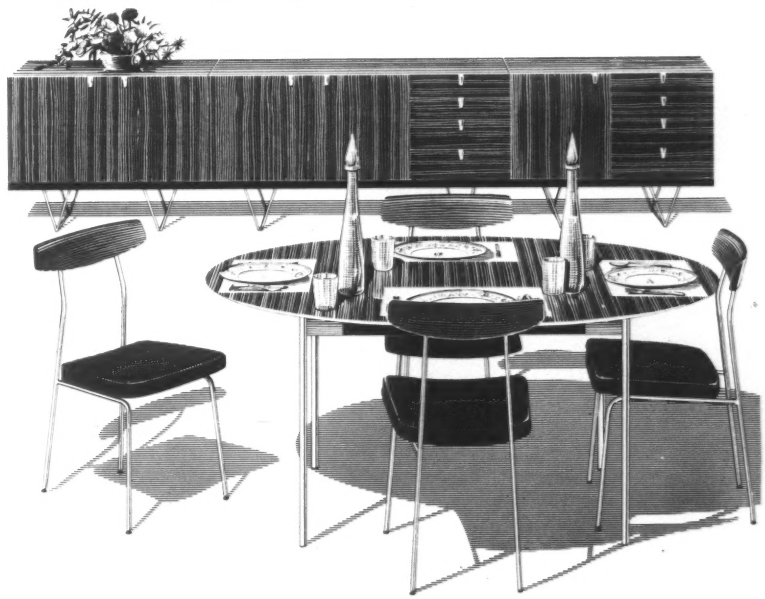
Name of Manufacturer.	*Balance and Track position.*	*Construction.*	*Clearances and Locking System.*	*Size and Weight.*	*Prices: ex Works.*	*Comments.*
4 Batley Up and over (similar to Brady unit). Ernest Batley Ltd, Holbrooks, Coventry. 	Pivoted lever arm and counterweight. Horizontal track both sides at lintel level.	Horizontally ribbed aluminium alloy or exterior grade mahogany plywood. Door travels on ball bearing wheels. Gear in angle steel and galvanized steel.	Behind and above lintel 3″. Behind jambs 2″. Aluminium alloy locking handle and shoot bolt.	6′ 3″ high × 6′ to 10′ 2″ wide.	In aluminium alloy: Standard size 7′ 5½″ × 6′ 3″ £20. from 6′ × 6′ 3″, £20/10/0 to 10′ 2″ × 6′ 3″, £30. In exterior grade mahogany plywood: Standard size, 7′ 5½″ × 6′ 3″, £19. From 6′ × 6′ 3″, £19/10/0 to 8′ 1″ × 6′ 3″, £20/10/0.	Open position contained within building line. Maximum projection whilst opening, 2′ 10″.
5 Batley 'Suparise' Ernest Batley Ltd, Holbrooks, Coventry. 	Steel spring. Horizontal track both sides at lintel level.	Door in aluminium or cedar wood. Gear of angle steel; pivot; tempered steel springs, galvanized steel tracks. Ball bearing track wheels.	2″ above and behind lintel 3″ behind jambs. Chromium plated cylinder type locking handle.	From 6′ to 8′ high. Weights up to 200 lb.	Gear only: £11/10/0. Doors in aluminium alloy: 8/- per sq. ft. Western Red Cedar: 8/- per sq. ft. Selected Deal: 5/6d. per sq. ft.	Gear forms weather proofing.
6 Brady Roller Shutter Door. Ernest Batley Ltd, Holbrooks, Coventry. 	Spring roller. Vertical track in jambs.	Selected timber laths, with steel or aluminium alloy as alternative.	12″ above and behind door head to 6½″ for 20′ high door. 3″ behind jambs.	For any width and height.	Standard size 7′ 5½″ × 6′ 3″, £23/10/0. From 7′ × 6′ at £26/5/0 to 9′ × 7′, £39/7/6.	Can be electrically operated, hand operated (small units) or chain operated. Inset plastic windows can be included in door construction for illumination.
7 Bolton 'Glydover' Bolton Gate Co. Ltd, Bolton, Lancs. 	Tension coil spring. Vertical tracks at jambs curving at top section to horizontal tracks at level of lintel.	All-steel construction 'Zintec' panels or 'Galvatite' panels with sherardized steel hinges. Ball bearing rollers.	12″ above door head. (Height of door plus 12″) behind head of door. 4″ at jambs.	Up to 16′ 6″ wide and 12′ high. In steel up to 30′ × 15′.	In timber: 8′ wide × 7′ high, £28 including draught strip. In steel: 8′ × 7′, £40/12/0.	Automatic operation systems can be supplied. Door does not tilt. Door contained within building line. 'Yale' lock, 42/- extra. Toughened glass windows, 30/- each extra.

STAG FURNITURE



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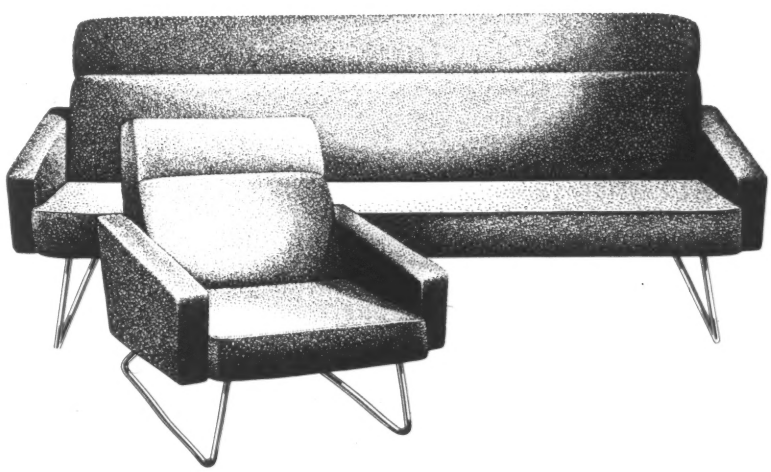
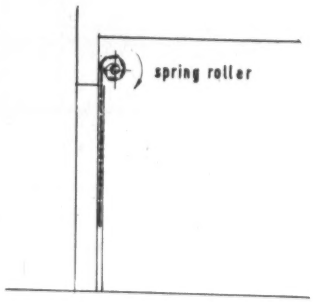
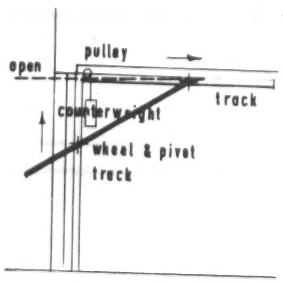
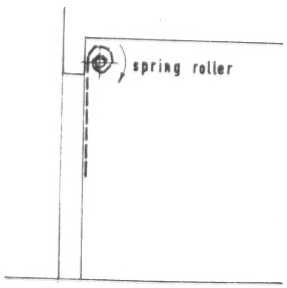
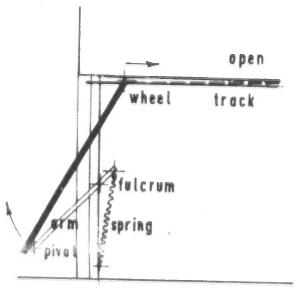


Illustrated brochures and prices will be gladly sent on request to :

THE STAG CABINET COMPANY LIMITED,
(AR) HAYDN ROAD, NOTTINGHAM

Name of Manufacturer.		*Balance and Track position.*	*Construction.*	*Clearances and Locking System.*	*Size and Weight.*	*Prices: ex Works.*	*Comments.*
8 Booth Weatherproof Rolling Shutters. John Booth & Sons (Bolton) Ltd, 26, Victoria Street, Westminster, S.W.1.		Helical counter-balancing springs encased in cylindrical steel barrels. Mild steel vertical tracks at jambs.	Laths of British rolled steel grip, galvanized steel strip laths. Aluminium or brass laths.		Up to heights of 34′. Up to openings of 25′.	By quotation.	Shutters up to 10′ wide and not more than 100 sq. ft. operated by means of pole or hook. Larger shutters operated by means of worm reduction gearing with sheradized hand chains. Units can be electrically operated.
9 Curfew Over doors. Curfew Doors & Shutters, Curfew Works, Jersey Street, Ancoats, Manchester, 4.		Pulley and counter-weights either side. Vertical and horizontal tracks.		4″ headroom. 9″ sideroom. Cylinder lock handle.	No standard sizes.	Gear for unit 6′ 6″ × 7′ 6″, £19. Gear for unit 10′ × 15′ £45.	Door projects at open position.
10 Curfew Rolling Doors. Curfew Doors & Shutters, Curfew Works, Jersey Street, Ancoats, Manchester, 4.		Helical springs. Reduction gear for large doors.	Steel or aluminium alloy laths with steel channel grooves and steel barrel rollers mounted on steel brackets. Wood laths connected with chain hinges: steel or wood grooves.	Diam. of coils 10″ (for 6′ height) to 17″ (for 20′ height). Space for door coil. 1. for self coiling 7½″ + diam. of coil. 2. for geared hand chain, coil diam. + 2″. 3. Electric, space required for motor bracket and gear, 2′ and 1′ 9½″ from face of mounting surface. Side clearance. 1. For self-coiling 4″ minimum. 2. Geared hand chain, 8½″ to 11⅛″. 3. Electric. 2′ 7″ to 2′ 9″ for motor 7⅞″ to 9⅝″ other side.	Maximum width: approx. 40′. Maximum area: 1,000 sq. ft.	Up to 70 sq. ft. at 15/- per sq. ft. in 20 gauge laths.	Roller mechanism can be fitted inside or outside or within openings. Operation by pole, endless chain, handle wind or motorized.
11 Ellard's 'Overdor' Ellard Sliding Door Gears Ltd, Works Road, Letchworth, Herts.		Tension coil spring. Horizontal tracks at lintel level.	Cold steel tracks, steel arms on pivot bearing and heavy duty coil springs.	1″ headroom. 2¾″ at jambs. Closed by pair of horizontal bars and cylinder lock in chromium plated T. handle.	From 6′ to 7′ high. Type 'L' for doors weighing up to 130 lbs. Type 'H' for doors weighing 130 to 200 lbs. Standard timber doors, 6′ 6″ high and 7′ wide.	Gear only. 'L', £12. 'H', £13/10/0.	Steel angle stiffeners for conversion of hinged doors, 18/-. To adapt locking device to secure door from inside and outside £1/1/0 extra. 6′ 6″ door contained with building line in open position. Door supported at all four corners.

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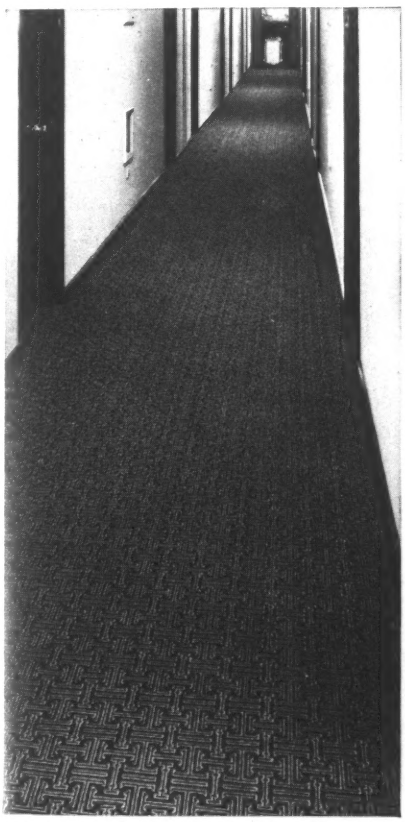

Hallway, carpeted in Golden Shield wool Brussels. The design is a classical Greek "Key" motif.

MORE SKYWAY • • • MORE GOLDEN SHIELD CARPETS

Naturally, as in the rest of the Skyway Hotel, all the carpets in the new bedroom wing are made by Carpet Trades Limited Kidderminster. (Supplied through Messrs. Andrew Bruce & Co. Ltd. London). In all, 3,296 more yards of Golden Shield carpeting have been added to the Skyway Hotel.

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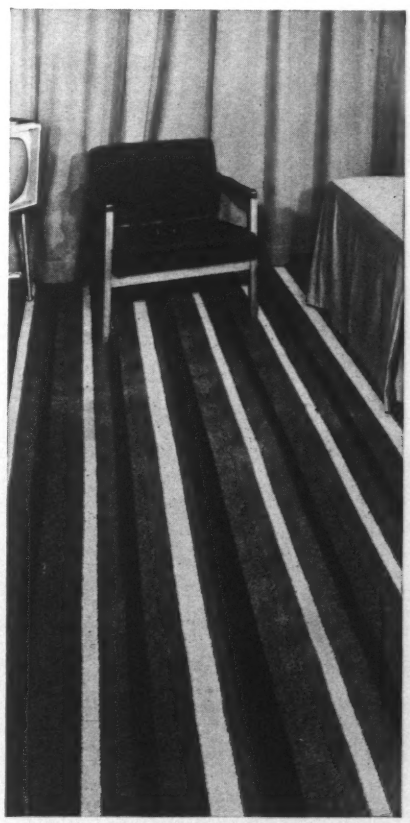


Bedroom, carpeted in "Stria" design textured Wilton.

THE INDUSTRY

Lighting fittings

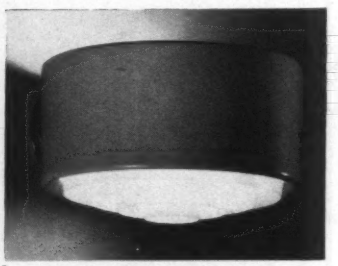
It is probably fair to say that the design of lighting fittings has passed into a new phase. Until now designers have had to prove that this functional element has really exciting possibilities as decoration (not the tizzy chain store variety). To do this they have had to explore every possible variation of shape, size, finish and colour. A decade of imaginative design (with a relatively low proportion of visual failures) has enabled them to make their point and to turn now to the less spectacular but highly important task of consolidation.

The new 'drum' range of fittings, recently introduced by Merchant Adventurers is simple, elegant and businesslike—as good an example of the 'consolidation' stage as any recently produced. The range consists of ceiling mounted, pendant and wall bracket lights (of which the latter is visually least successful). Fittings are available in sizes from 5 in. to 18 in. diameter for 40 to 200 watt lamps. The diffusing louvre is made in opal urea formaldehyde which has a high light transmission, is claimed not to discolour and to withstand high temperatures. The concentric design gives a cut-off of 45 degrees.

Finish is stove enamel in several colours—pillar box red, jasmine yellow, pearl grey or matt black.

Merchant Adventurers of London Ltd., 43 Portland Road, London, W.11.

Three light fittings from the new range by Merchant Adventurers: 1, wall bracket; 2, ceiling mounted; 3, pendant.



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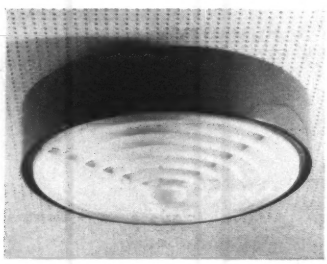

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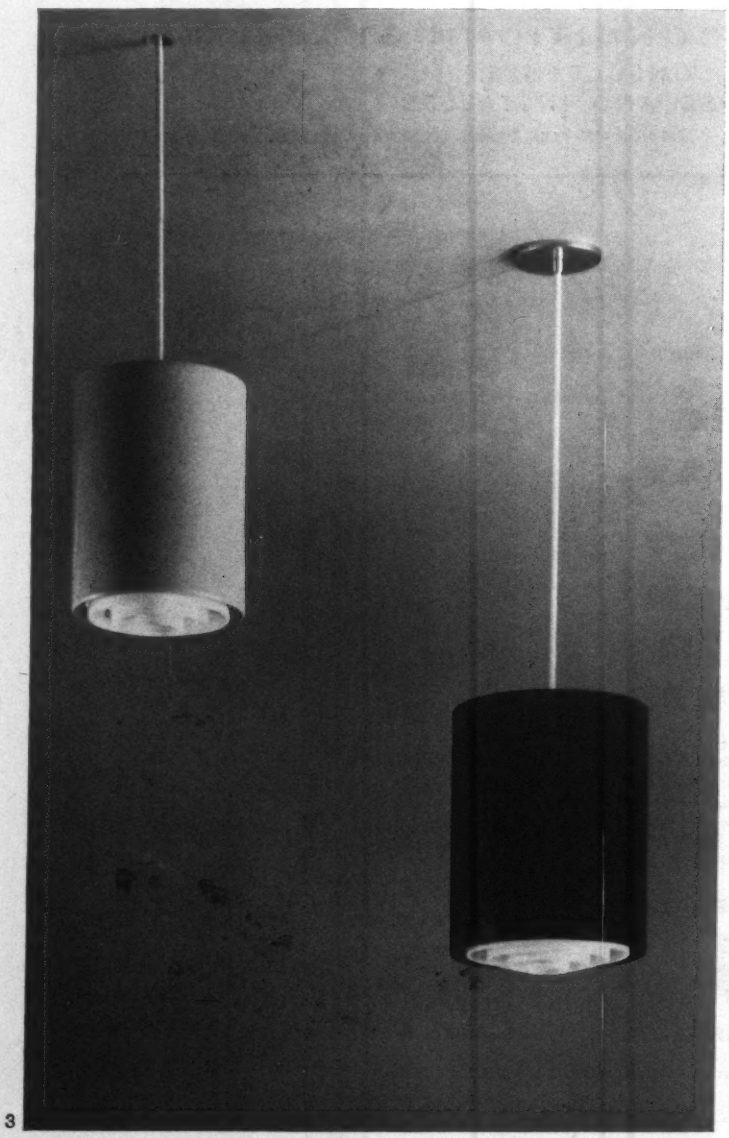

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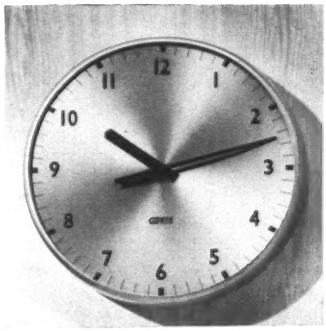

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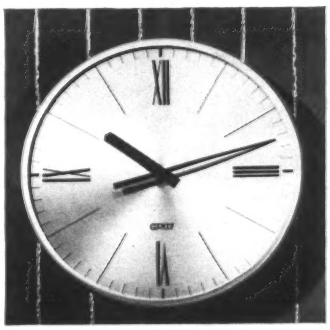

5

4, 5, two electric wall clocks, designed by Jack Howe for Gents.

Electric clocks

The fascination which the workings of a clock hold for most people is strangely contrasted with the casual acceptance of it as an element of decoration in the interior of a building. You glance at the clock for that appointment or 'phone call without registering whether its face is well designed or is a visual monstrosity. It may be a perverse rule of the order of things that the better the design of the clock face and the more efficient the workings behind it the less likely it is to be noticed. Yet it is the very competence of the design which ensures an element at once functional and decorative. The wall clocks, 4, 5, were designed by Jack Howe for Gents of Leicester, a long established firm of manufacturing electrical engineers, and are available for operating either on A.C. mains (synchronous version) or as part of a master clock system (impulse version). The designs are included in the COID index and are available in three sizes 9 in., 12 in., and 18 in. diameter dials, having convex glasses in spun aluminium cases finished satin silver.

Gent & Co., Ltd., Faraday Works, Temple Road, Leicester.

CONTRACTORS etc

Furniture Showrooms and Offices, Watford. *Architect:* Erno Goldfinger. *General contractor:* J. Honour & Son. *Sub-contractors: Reinforced concrete frame:* Formcrete Ltd. *Reinforced concrete:* British Reinforced Concrete Engineering Co. *Asphalt tanking:* Limmer & Trinidad Lake Asphalt Co. *Felt roofing:* William Briggs & Sons. *Thermoplastic tile paving:* Armstrong Cork Co. *Terrazzo:* Alan Milne (Flooring) Ltd. *Ironmongery:* Parker Winder & Achurch Ltd. *Metal windows:* Williams & Williams Ltd. *Sanitary fittings:* Stitsons Sanitary Fittings Ltd. *Heating:* Weatherfoil Ltd. *Electrical installation:* Troughton & Young Ltd. *Patent glazing:* Williams & Williams Ltd. *Iron and metalwork:* A. W. Gray Ltd. *Precast concrete:* Girlings Ferro Concrete Co. *Doors:* H. Teale & Son. *Ceilings:* G. C. Horsburgh & Co.

Housing, Offices and shops, Soho, London. *Architects:* Riches and Blythin. *General contractor:* Wates Ltd. *Sub-contractors: Roofing:* Frazzi Ltd. *Windows and storey frames:* Crittall Manufacturing Co. *Reconstructed stone:* Shockcrete Products Ltd. *Mosaic and terrazzo:* W. B. Simpson & Sons. *Lifts:* Hammond & Champness Ltd. *Sprinklers:* Matthew Hall & Co. *Pavement lights:* Luxfer Ltd. *Cement glaze:* Cement Glaze Ltd.

Telephone Building, Farringdon Street, London. *Architects:* Ministry of Works. *General contractor:* Tersons Ltd. *Sub-contractors: Bricks, floor and partition blocks:* London Brick Co. *Fletton bricks and hollow tile flooring blocks:* Sankey Ltd. *Lignacite partition blocks:* Lignacite Ltd. *Lifts:* Waygood-Otis Ltd. *Decorative ceramics:* Hathernware Ltd. *Bored pile holes for r.s.j.'s:* The Cementation Co. *Shop fitting work and glass entrance doors:* Brent Metal Works Ltd. *Main joinery of doors, door frames, borrowed lights, partitions and fittings:* John Sadd & Sons. *Roller shutter grilles:* Haskins. *Sliding and folding partitions:* Horsley Smith & Co. (Hayes) Ltd. *Ventilation installations:* Supervents Ltd. *Sprinkler installation:* The Atlas Sprinkler Co. *Stage lighting equipment:* W. S. Furse & Co. *Glazed partitions:* Metalform Ltd. *Demountable partitions:* Gyproc Products Ltd. *Bronze metal handrail:* The Luco Art Metal Co. *Purple and buff facing bricks:* Cape Building Products Ltd. *Paints:* Duresco Products Ltd. *Burwell facing bricks:* Burwell Brick Co. *Midhurst white bricks:* Midhurst Whites Ltd. *Stonework:* Bath & Portland Stone Firms Ltd. *Marble:* Nine Elms Stone Masonry Works. *Hardwood windows:* Rippers Ltd. *Aluminium windows and doors:* The Crittall Manufacturing Co. *Bored in situ piling:* Piling & Construction Co. *Terrazzo partitions, window cills and stairs finish:* Marriott & Price Ltd. *Fire resisting doors:* Durasteel Ltd. *Copper roofing:* Holloway Metal Roofs Ltd. *Acoustic wall and ceiling tiling:* Insulation all Services Ltd. *Lightweight concrete screeds to roofs:* Celcon Ltd. *Composition block flooring:* The Terradura Flooring Co. *Balustrades, railings and ladders:* Builders Iron & Ironwork Ltd. *Window cleaning gear:* Palmers Travelling Cradle & Scaffold Co. *Retractable jibs:* R. Smith (Horley) Ltd. *Mosaic and faience tiling:* W. B. Simpson & Sons.